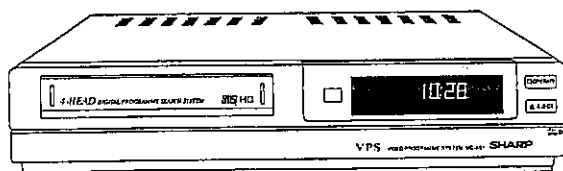


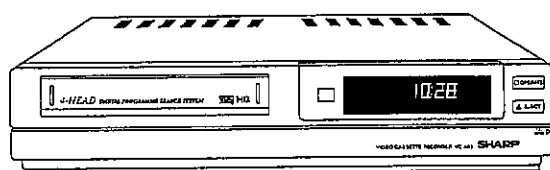
SHARP**SERVICE MANUAL
SERVICE-ANLEITUNG**

S23Q7VC-A51GM



VC-A51GM(GY)

VHS VIDEO CASSETTE RECORDER
VHS VIDEO-CASSETTEN-RECORDER



VC-A51SM(GY), VC-A51YM(GY)

**MODELS
MODELLE**

**VC-A51GM(GY)
VC-A51SM(GY)
VC-A51YM(GY)**

The service manual covers only those items that differ from the VC-A60YM(BR). For information on any other items, refer to the service manual for the VC-A60YM(BR).

Die Service-Anleitung beinhaltet nur die Posten, welche sich vom Modell VC-A60YM(BR) unterscheiden. Informationen über alle anderen Posten können der Service-Anleitung des Modells VC-A60YM(BR) entnommen werden.

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SHARP CORPORATION

SPECIFICATIONS

Format: VHS PAL standard
Video recording: Two rotary head helical system scan system
Video signals: PAL/SECAM colour and B/W signals, 625 lines (VC-A51GM(GY))
PAL colour and B/W signals, 625 lines (VC-A51SM(GY)/51YM(GY))
Recording/playing: 4 hours max. with time
SHARP E-240 tape (SP)
SHARP E-480 tape (LP)
Tape width: 12.7 mm
Tape speed: 23.39 mm/sec. (SP)
11.70 mm/sec. (LP)
Antenna: 75 ohm unbalanced
Receiving channel: UHF channel E21 – E69
VHF channel
S1 – S20/E 2 – E12
RF converter output: UHF channel E30 – E39 signal (adjustable). Preset to CH 36
Power requirement: AC 230 V, 50 Hz
Power consumption: Approx. 27W (VC-A51GM(GY))
Approx. 26W (VC-A51SM(GY)/51YM(GY))
Operating temperature: 5°C to 40°C
Storage temperature: – 20°C to 55°C
Weight: 6.1kg (VC-A51GM(GY))
6.0kg (VC-A51SM(GY)/51YM(GY))
Dimensions: 430 mm (W) x 348mm (D) x 82 mm (H)
Video
Input: 1.0 Vp-p, 75 ohm
Output: 1.0 Vp-p, 75 ohm
Audio
0 dBs = 0.775 Vrms
Input: Line: – 3.8 dBs, more than 47 k ohm
Output: Line: – 3.8 dBs, less than 1 k ohm
Accessories included: Antenna 75 ohm coaxial connector cable (plug provided)
Operation manual
Infrared remote control
Battery

*As part of our policy of continuous improvement, we reserve the right to alter design and specifications with-out notice.

Note: The antenna must correspond to the new standard DIN 45325 (IEC 169-2) for combined VHF/UHF antenna with 75 ohm connector.

TECHNISCHE DATEN

Format: VHS, PAL Norm
Video-Aufzeichnungs-: Schrägsपुरaufzeichnung mit zwei rotierenden Köpfen
system
Videosignale: PAL/SECAM-Farb-und Schwarz-weißsignale, 625 Zeilen (VC-A51GM(GY))
PAL-Farb-und Schwarz-weißsignale, 625 zeilen (VC-A51SM(GY)/51YM(GY))
Aufzeichnungs-: 4 Stunden maximal mit Wiedergabezeit
E240-Band von SHARP (SP)
E480-Band von SHARP (LP)
Bandbreite: 12,7 mm
Bandgeschwindigkeit: 23,39 mm/s. (SP)
11.70 mm/s. (LP)
Antenne: 75 ohm unsymmetrisch
Empfangskanäle: UHF-Kanäle E21 – E69
VHF-Kanäle
S1 – S20/E2 – E12
HF-Wandler: UHF-Kanäle E30 – E39
Ausgangssignal (einstellbar), vorein-gestellt auf Kanal E36
Stromversorgung: Netzstrom 230 V, 50 Hz
Leistungsaufnahme: Ungefähr 27W (VC-A51GM(GY))
Ungefähr 26W (VC-A51SM(GY)/ 51YM(GY))
Betriebstemperatur: 5° bis 40°C
Lagerungstemperatur: – 20° bis 55°C
Gewicht: 6.1 kg (VC-A51GM(GY))
6.0 kg (VC-A51SM(GY)/51YM(GY))
Abmessungen: 430 (B) x 348 (T) x 82 (H) mm
Video
Eingang: 1,0 Vss, 75 Ohm
Ausgang: 1,0 Vss, 75 Ohm
Audio
0 dBs = 0,775 Veff.
Eingang: Direkteingang: – 3,8 dBs, mehr als 47 k Ohm
Ausgang: Direktausgang: – 3,8 dBs, weniger als 1 k Ohm
Mitgeliefertes: 75 Ohm-Koaxialkabel
Zubehör für Antennenanschluß (mit Stecker)
Bedienungsanleitung
Fernbedienung
Batterie

*Im Sinne der ständi-gen Verbesserung behalten wir uns das Recht vor, die äußere Aufmachung und tech-nischen Daten ohne Vorankündigung zu ändern.

Zur Beachtung: Die Antenne muß der neuen DIN-Norm 45325 (IEC 169-2) für VHF/UHF-Kombiantennen mit 75 Ohm-Anschluß entsprechen.

DISASSEMBLY AND REASSEMBLY

UPPER CABINET: Remove 4 screws ①.

BOTTOM PLATE: Remove 6 (VC-A51GM) or 7 (VC-A51SM/VC-A51YM) screws ③.
Remove 2 Earth Connection plates ②.

FRONT PANEL: Remove 1 screw ④.
Remove 3 clips ⑤.

MAIN PWB: Remove 2 Y/C PWB holders ⑥.
Remove 3 screws ⑦.
Remove 2 screws ⑧.

ANTENNA TERMINAL BOARD: Remove 2 screws ⑨.

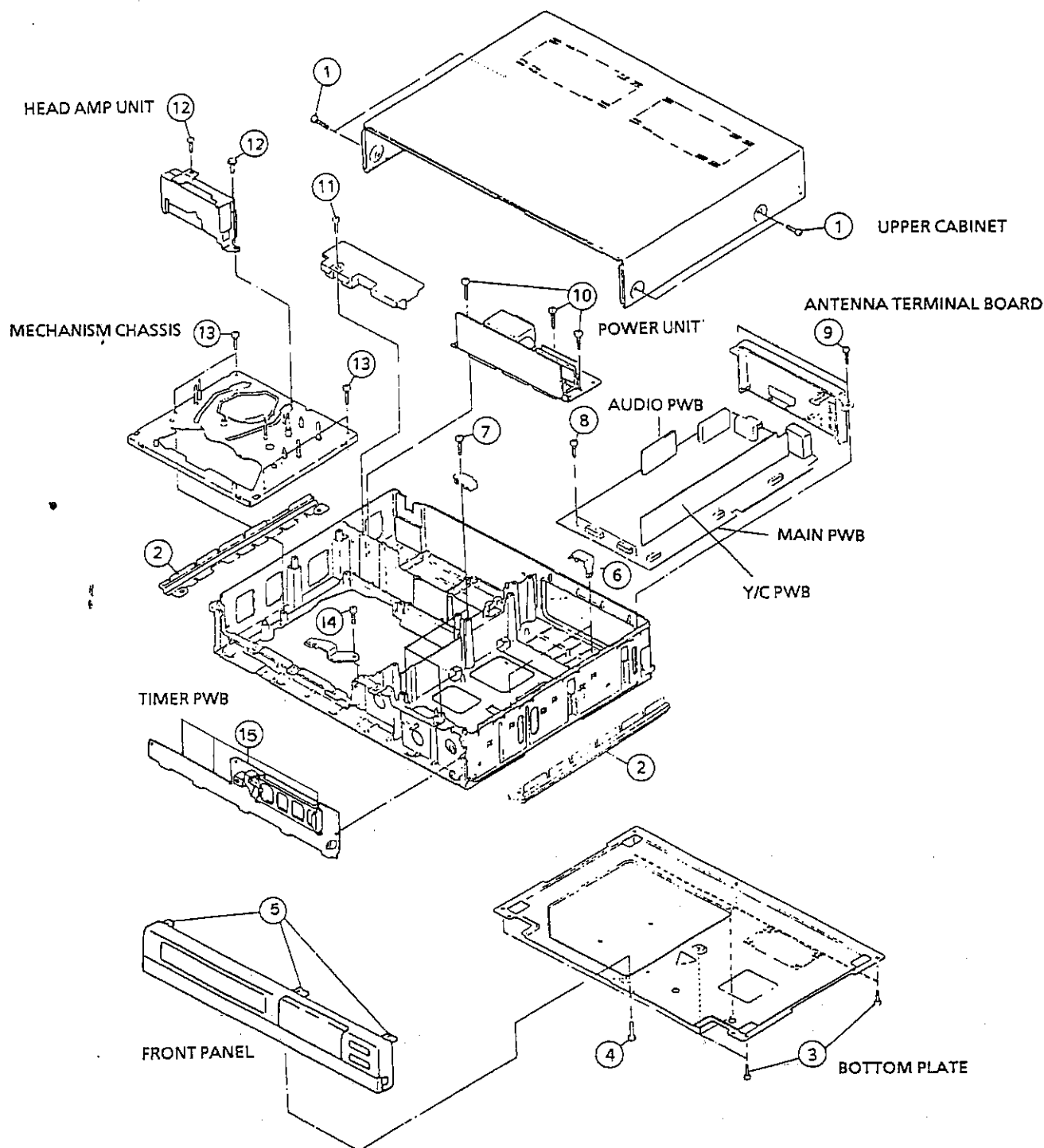
POWER UNIT: Remove 3 screws ⑩.
Remove 1 screw ⑪.

HEAD AMP UNIT: Remove 2 screws ⑫.

MECHANISM CHASSIS: Remove 4 screws ⑬.

CHASSIS: Remove 1 screw ⑭.

TIMER PWB: Remove 4 clips ⑮.



AUSBAU UND WIEDERZUSAMMENBAU

GEHÄUSEOBERTEIL : Die 4 Schrauben ① losdrehen.

BODENPLATTE : Die 6 (VC-A51GM) oder 7 (VC-A51SM/VC-A51YM) Schrauben ③ losdrehen.
Die 2 Erdungsplatte ② abnehmen.

FRONTTAFEL : Die 1 Schraube losdrehen.
Die 3 Klammern ⑤ entfernen.

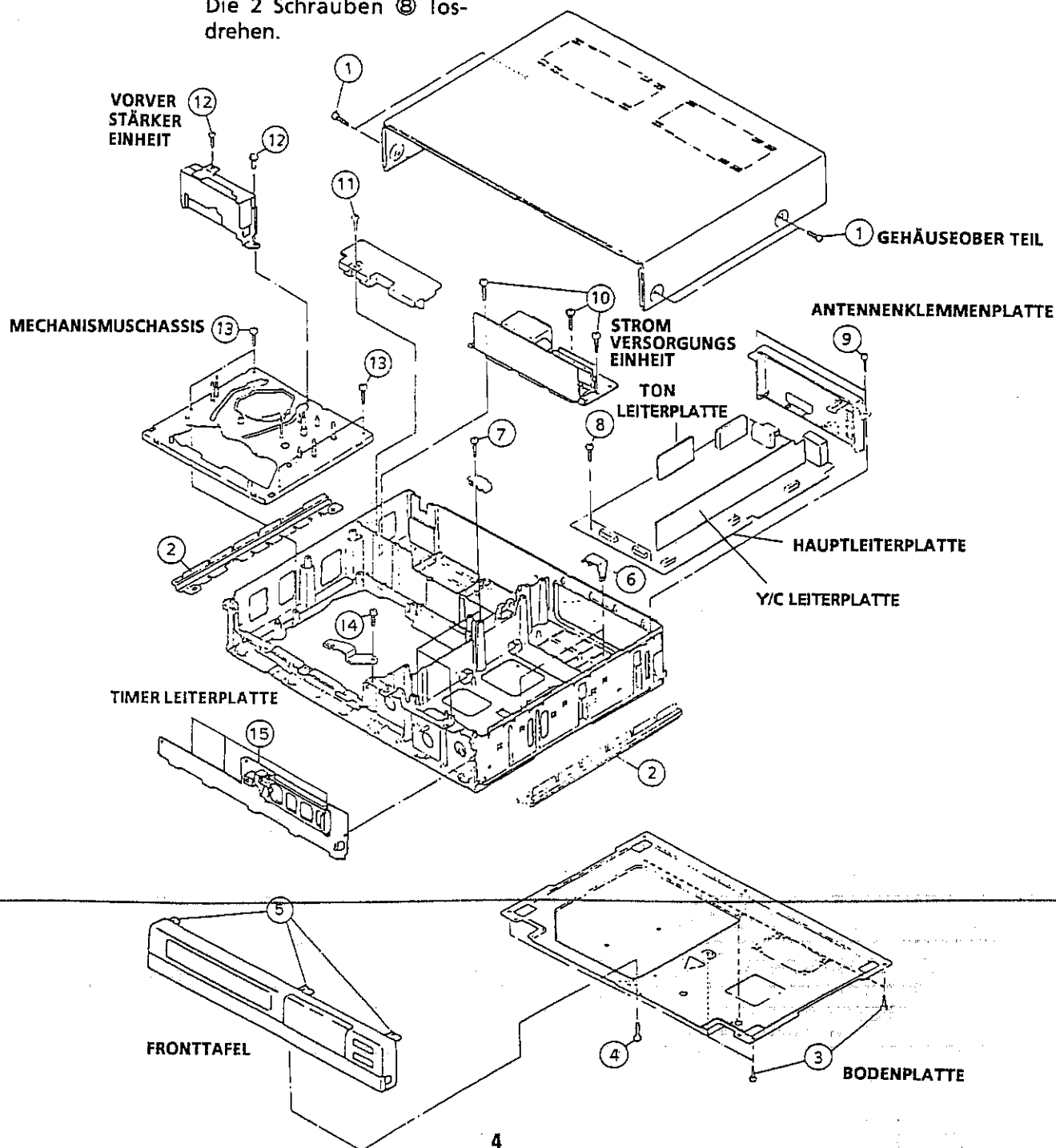
HAUPTLEITERPLATTE : Die 2 Y/C-Leiterplattehalter ⑥ entfernen.
Die 3 Schrauben ⑦ losdrehen.
Die 2 Schrauben ⑧ losdrehen.

ANTENNENKLEMMENPLATTE : Die 2 Schrauben ⑨ losdrehen.

STROMVERSORGUNGSEINHEIT : Die 3 Schrauben ⑩ losdrehen.
Die 1 Schraube ⑪ losdrehen.

KOPFVORVERSTÄRKEREINHEIT MECHANISMUSCHASSIS : Die 2 Schrauben ⑫ losdrehen.
Die 4 Schrauben ⑬ losdrehen.
Die 1 Schraube ⑭ losdrehen.


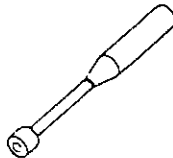
ZEITSCHALTERLEITERPLATTE : Die 4 Klammern ⑮ entfernen.


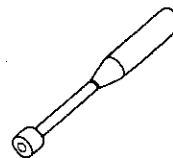


TOOLS NECESSARY FOR ADJUSTING THE MECHANICAL UNITS/ ERFORDERLICHE WERKZEUGE ZUR EINSTELLUNG DER MECHANISCHEN TEILE

The following tools are required for proper service and satisfactory repair.

Für ordnungsgemäße Wartung und zufriedenstellende Reparatur sind die folgenden Werkzeuge erforderlich.

No.	Jig Item	Part No.	Code	Configuration	Remarks
9	Alignment Tape (PAL)	VROCPSV	CK		This tape is especially used for electrical fine adjustment.
15	Box Driver	JIGDRIVER110-7	AS		This Jig is used for height adjustment of the A/C head, and X-position.
		JIGDRIVER110-4	AV		This Jig is used for height adjustment of the retaining guide.

Nr.	Vorrichtung	Teil Nr.	Kode	Aussehen	Bemerkungen
9	Abgleichband (PAL)	VROCPSV	CK		Dieses Band dient insbesondere zur elektrischen Feineinstellung.
15	Stecknuß-Schraubendreher	JIGDRIVER110-7	AS		Dieser Stecknuß-Schraubendreher dient zur Höheneinstellung des Ton-/Steuerkopfes, sowie der X-Position
		JIGDRIVER110-4	AV		Dieser Stecknuß-Schraubendreher dient zur Höheneinstellung der Rückhalteführung.

ADJUSTMENT OF ELECTRICAL CIRCUITRY/ EINSTELLUNG DER ELEKTRISCHENSCHALTkreISE

ADJUSTMENT OF MAIN (SERVO, SYSTEM CONTROL, TUNER)/OSD CIRCUIT/ EINSTELLUNG DER HAUPT (REGEL, SYSTEMSTEUERUNGS, TUNER)-/ BILDSCHIRMANZEIGENkreISEN

■ ADJUSTMENT OF SERVO CIRCUIT

Adjustment of playback switching point

Measuring instrument	Oscilloscope
Mode	Playback Tracking button at center
Tape used	Alignment tape (VROCPSV)
Test point	CH-1; TP502 CH-2; Video output terminal (CH-1 trigger slope switch at (+), Internal trigger at CH-1 side)
Adjusting point	R740 (phase generator MM control)
Specification	$6.5 \pm 0.5H$

1. Insert the alignment tape (VROCPSV) and put the unit in playback mode.
2. Set the tracking button to the center position.
3. Adjust R740 (phase generator MM control) so that the waveform on the oscilloscope screen be as shown in Figure 2-1.

■ EINSTELLUNG DES REGELSCHALTkreISES

Einstellung des Wiedergabe-Umschaltpunkts

Meßinstrument	Oszilloskop
Betriebsart	Wiedergabe Bildsuchlauf-Knopfin Mittelposition
Eingelegtes Band	Abgleichband (VROCPSV)
Prüfpunkt	Kanal 1; TP502 Kanal 2; Video- Ausgangsanschluß (Kanal 1 Triggerimpuls- Anstiegsschalter auf (+), interner Triggerimpuls am Kanal 1)
Einstellpunkt	R740 (Phasengenerator/mono- stabile Multivibrator- Steuerung)
Spezifikation	$6,5 \pm 0,5H$

1. Das Abgleichband (VROCPSV) einlegen und das Gerät auf Wiedergabe schalten.
2. Den Bildsuchlauf-Knopf in die Mittelposition bringen.
3. R740 (Phasengenerator/monostabile Multivibrator-Steuerung) so einstellen, daß die wellenform am Oszilloskop jener in Abbildung 2-1 entspricht.

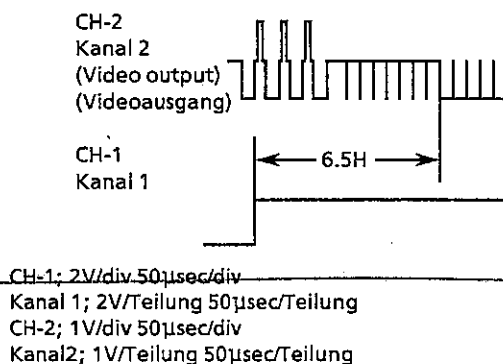


Figure 2-1. Abbildung 2-1.

Precaution in adjusting the X-position

Measuring instrument	Oscilloscope
Mode	Playback
Tape used	Alignment tape (VROCPSV)
Test point	CH-1; TP502 (Head Switching Pulse) CH-2; Pin ③ of IC701 (Playback Control) (CH-1 Oscilloscope Trigger S)
Adjusting point	_____
Specification	T = 30.58msec.

1. Insert the alignment tape (VROCPSV) and put the unit in the playback mode.
2. Set the tracking button to the center position.
3. Make sure that the waveform on the oscilloscope screen be as shown in Figure 2-2.

Vorsichtsmaßnahmen bei der Einstellung der X-Position

Meßinstrument	Oszilloskop
Betriebsart	Wiedergabe
Eingelegtes Band	Abgleichband (VROCPSV)
Prüfpunkt	Kanal 1; TP502 (Kopfschaltimpuls) Kanal 2; Stift ③ des IC701 (Wiedergaberegler) (Kanal 1, Oszilloskoptrigger S)
Einstellpunkt	_____
Spezifikation	T = 30,58 msec

1. Das Abgleichband (VROCPSV) einlegen und das Gerät in die Wiedergabe-Betriebsart schalten.
2. Den Bildsuchlauf-Knopf in die Mittelposition bringen.
3. Sicherstellen, daß die Wellenformen am Oszilloskop-Bildschirm mit jenen in Abbildung 2-2 (Linke) identisch sind.

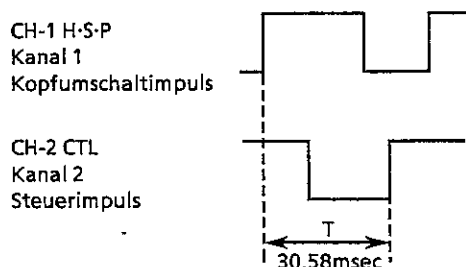


Figure 2-2. Abbildung 2-2.

• Test points layout/Prüfpunkt-Diagramm

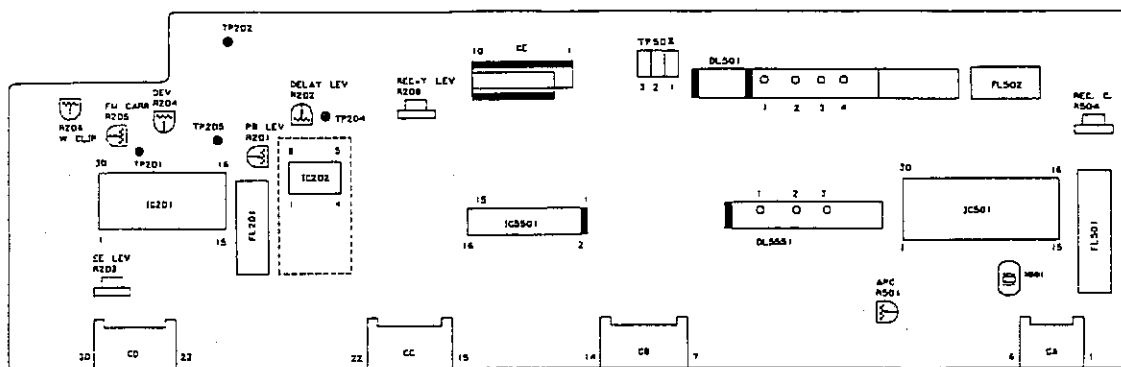


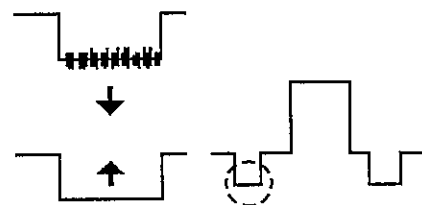
Figure 2-3. Y/C PWB Abbildung 2-3. Y/C LEITERPLATTE

■ ADJUSTMENT OF THE IF CIRCUIT

Adjustment of the RF AGC

Measuring instrument	Oscilloscope Signal generator
Mode	EE
Input signal	Colour bar signal
Test point	TP1551 (GND) TP1552 (Video Output)
Adjusting point	VR001 (AGC control)

1. Receive the colour bar signal (input field strength: 80 dB μ).
2. Observe the video output terminal waveform on the oscilloscope. Adjust VR001 (AGC control) in the IF pack until the noise disappears from the oscilloscope screen and the waveform nearly comes into sync.



Just before shrinking
Genau vor der Schrumpfung

Figure 2-4. Abbildung 2-4.

■ EINSTELLUNG DES ZWISCHENFREQUENZSCHALTKREISES Einstellung der automatischen Verstärkungsregelung (AGC)

Meßinstrument	Oszilloskop Signalgenerator
Betriebsart	EE
Eingangssignal	Farbbalkensignal
Prüfpunkt	TP1551 (Masse) TP1552 (Video-Ausgang)
Einstellpunkt	VR001 (Automatischer Verstärkungsregler)

1. Das Farbbalkensignal (Eingangsfeldstärke: 80 dB μ) empfangen.
2. Die Sonde des Oszilloskops an den Video-Ausgangsanschluß anschließen. VR001 (Automatischer Verstärkungsregler) so einstellen, daß die Spitze des Horizontalsynchronisierimpulses nicht gestört ist.

● Test points layout/Prüfpunkt-Diagramm

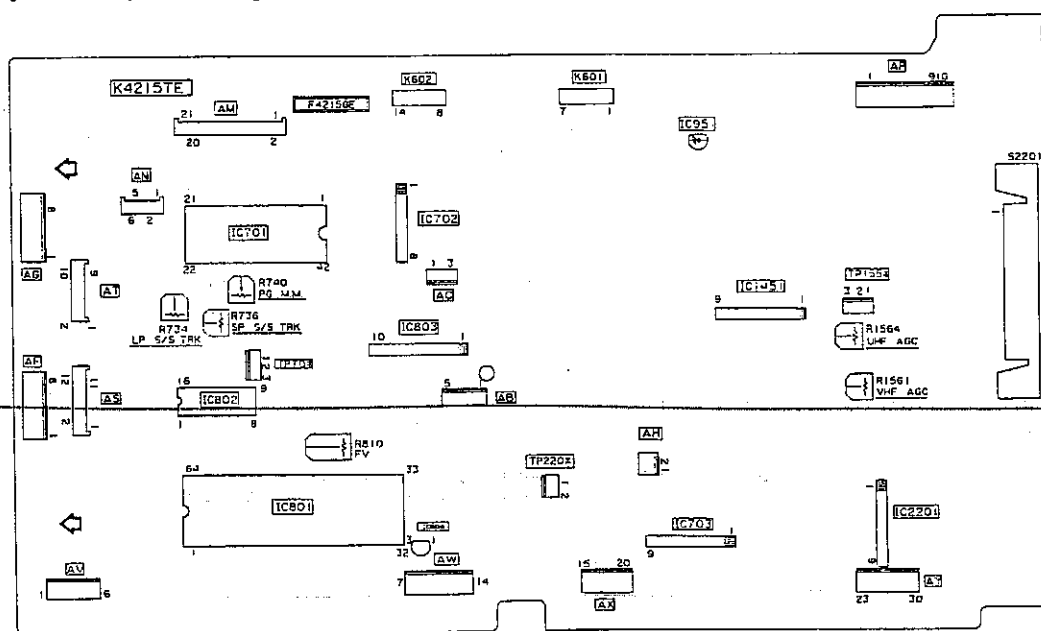
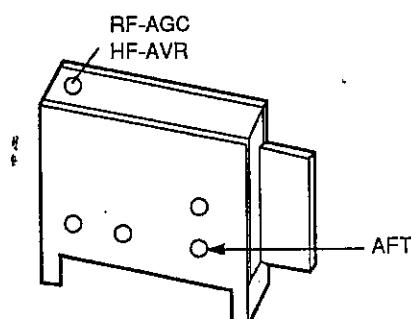


Figure 2-5. MAIN PWB Abbildung 2-5. HAUPT LEITERPLATTE

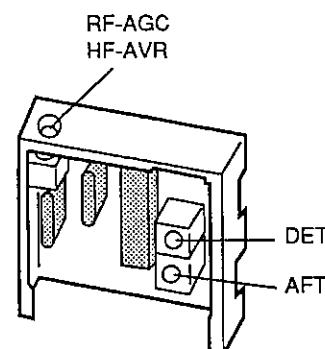
Adjustment of the AFT

Measuring instrument	Oscilloscope Signal generator
Mode	EE
Input signal	PIF frequency uniwave Colour bar signal (70 dB μ)
Test point	TP1551 (GND) TP1552 (Video Output)
Adjusting point	T002 (AFT coil)
Specification	_____

1. Receive the colour bar signal (input field strength: 70 dB μ).
2. Using the signal generator, feed the PIF frequency (38.9MHz) signal (sinewave) to the tuner IF output terminal.
3. Set the tuning switch to the VHF or UHF position. Keep the tuning button (+) or (–) depressed until the beating on the oscilloscope screen be minimum.
4. Set the tuning switch on the normal position. Adjust T002 (AFT coil) so that beating on the oscilloscope screen be minimum.



(VC-A51GM/VC-A51YM))



(VC-A51SM)

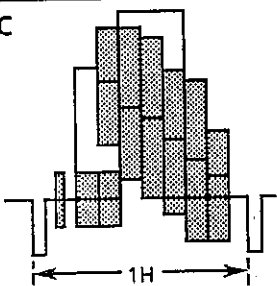
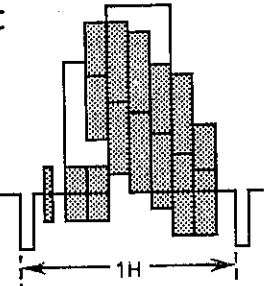
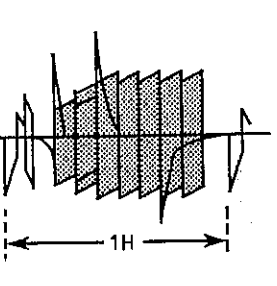
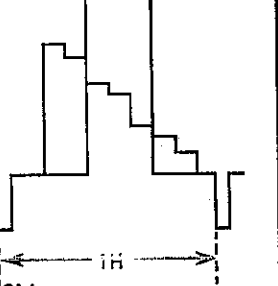
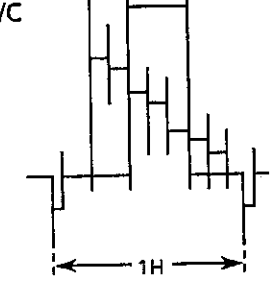
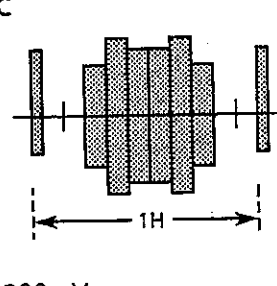
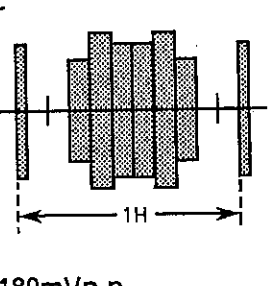
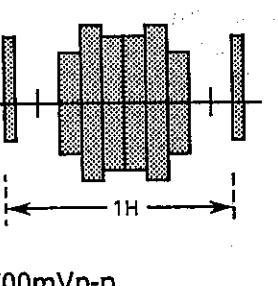
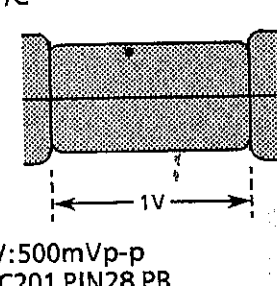
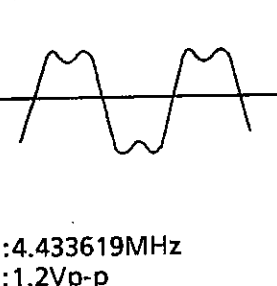
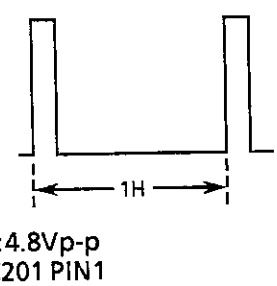
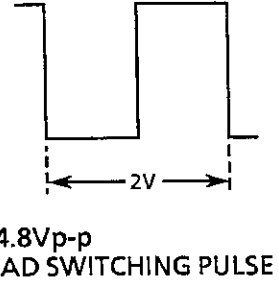
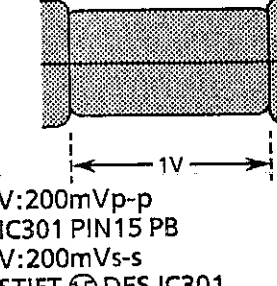
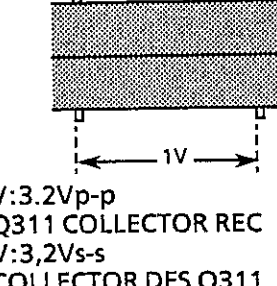
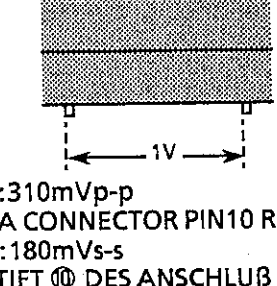
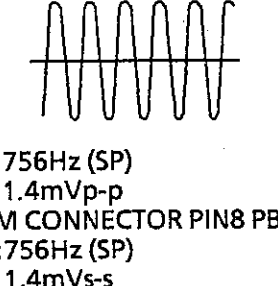
Figure 2-6. IF-Module IF-Module
Abbildung 2-6. ZF-Modul ZF-Modul

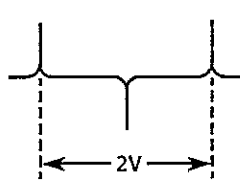
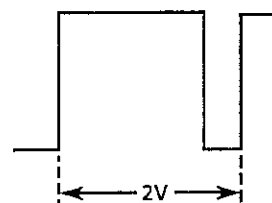
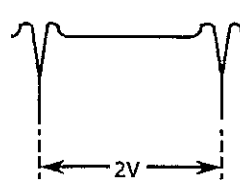
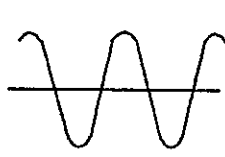
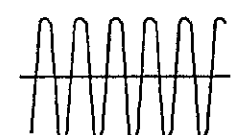
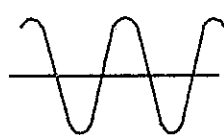
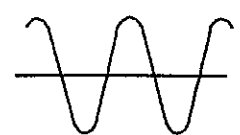
Einstellung der automatischen Feinabstimmung (AFT)

Meßinstrument	Oszilloskop Signalgenerator
Betriebsart	EE
Eingangssignal	Bild-ZF "Uni-Welle" Farbbalkensignal (70 dB μ)
Prüfpunkt	TP1551 (Masse) TP1552 (Video-Ausgang)
Einstellpunkt	T002 (Feinabstimm- automatikspule)
Spezifikation	_____

1. Das Farbbalkensignal (Eingangsfeldstärke: 70 dB μ) empfangen.
2. Mit dem Signalgenerator das Bild-ZF-Signal (38,9MHz) (Sinuswelle) dem ZF-Ausgangsanschluß des Tuners zuführen.
3. Den Abstimmsschalter auf VHF oder UHF stellen. Die Abstimmaste (+) oder (–) gedrückt halten, bis die Überlagerung am Oszilloskop-Bildschirm dem Minimalwert entspricht.
4. Den Abstimmsschalter in die Normalposition bringen. T002 (Feinabstimmautomatikspule) so einstellen, daß die Überlagerung am Oszilloskop-Bildschirm dem Minimalwert entspricht.

WAVE FORMS / WELLENFORMEN

<p>Y/C</p>  <p>V: 1.0Vp-p IC201 PIN5 REC/EE V: 1.0Vs-s STIFT ⑤ DES IC201 AUFZEICHNUNG/EE</p>	<p>Y/C</p>  <p>V: 2.0Vp-p IC201 PIN9 REC/PB V: 2.0Vs-s STIFT ⑨ DES IC201 AUFZEICHNUNG/ WIEDERGABE</p>	<p>Y/C</p>  <p>V: 1.4Vp-p IC501 PIN18 REC/EE V: 1.4Vs-s STIFT ⑱ DES IC501 AUFZEICHNUNG/EE</p>	<p>Y/C</p>  <p>V: 1.0Vp-p IC201 PIN21 PB V: 1.0Vs-s STIFT ⑳ DES IC201 WIEDERGABE</p>
<p>Y/C</p>  <p>V: 300mVp-p TP201 REC/EE V: 300mVs-s TP201 AUFZEICHNUNG/EE</p>	<p>Y/C</p>  <p>V: 200mVp-p IC501 PIN22 REC/EE V: 200mVs-s STIFT ㉒ DES IC501 AUFZEICHNUNG/EE</p>	<p>Y/C</p>  <p>V: 180mVp-p Q503 EMITTER REC V: 180mVs-s Q503 EMITTER AUFZEICHNUNG</p>	<p>Y/C</p>  <p>V: 700mVp-p IC501 PIN30 PB V: 700mVs-s STIFT ㉓ DES IC501 WIEDERGABE</p>
<p>Y/C</p>  <p>V: 500mVp-p IC201 PIN28 PB V: 500mVs-s STIFT ㉔ DES IC201 WIEDERGABE</p>	<p>Y/C</p>  <p>H: 4.433619MHz V: 1.2Vp-p CB CONNECTOR PIN11 H: 4.433619MHz V: 1.2Vs-s STIFT ① DES ANSCHLUß CB</p>	<p>Y/C</p>  <p>V: 4.8Vp-p IC201 PIN1 COMPOSITE SYNC. V: 4.8Vs-s STIFT ① DES IC201 BILDAUSTASTSYNCRON</p>	<p>H/A</p>  <p>V: 4.8Vp-p HEAD SWITCHING PULSE IC301 PIN1 V: 4.8Vs-s KOPFUMSCHALTIMUS STIFT ① DES IC301</p>
<p>H/A</p>  <p>V: 200mVp-p IC301 PIN15 PB V: 200mVs-s STIFT ⑬ DES IC301 WIEDERGABE</p>	<p>H/A</p>  <p>V: 3.2Vp-p Q311 COLLECTOR REC V: 3.2Vs-s COLLECTOR DES Q311 AUFZEICHNUNG</p>	<p>H/A</p>  <p>V: 310mVp-p XA CONNECTOR PIN10 REC V: 180mVs-s STIFT ⑩ DES ANSCHLUß XA</p>	<p>SERVO</p>  <p>H: 756Hz (SP) V: 1.4mVp-p AM CONNECTOR PIN8 PB H: 756Hz (SP) V: 1.4mVs-s STIFT ⑧ DES ANSCHLUß AM WIEDERGABE</p>

<p>SERVO</p>  <p>V: 1.2Vp-p (SP MODE) IC701 PIN42 PB V: 1,2Vs-s (SP-BETRIEBSART) STIFT ④ DES IC701 WIEDERGABE</p>	<p>SERVO</p>  <p>V: 4.6Vp-p IC701 PIN33 PB V: 4,6Vs-s STIFT ③ DES IC701 WIEDERGABE</p>	<p>SERVO</p>  <p>V: 0.6Vp-p IC701 PIN4 PB V: 0,6Vs-s STIFT ④ DES IC701 WIEDERGABE</p>	<p>SERVO</p>  <p>H: 600Hz V: 1.2Vp-p IC701 PIN8 PB H: 600Hz V: 1,2Vs-s STIFT ⑤ DES IC701 WIEDERGABE</p>
<p>AUDIO</p>  <p>H: 70 ± 5kHz V: 7.5mVp-p TP601(+), TP602(-) REC H: 70 ± 5kHz V: 7,5mVs-s TP601(+), TP602(-) AUFZEICHNUNG</p>	<p>AUDIO</p>  <p>H: 1kHz V: 54mVp-p K602 PIN14 REC/PB H: 1kHz V: 54mVs-s STIFT ④ DES K602 AUFZEICHNUNG/ WIEDERGABE</p>	<p>AUDIO</p>  <p>H: 1kHz V: 1.6mVp-p MH CONNECTOR PIN1 PB H: 1kHz V: 1,6mVs-s STIFT ① DES ANSCHLUß MH WIEDERGABE</p>	

SCHEMATIC DIAGRAM / SCHEMATISCHER SCHALTPLAN

IMPORTANT SAFETY NOTICE:

BE SURE TO USE GENUINE PARTS FOR SECURING THE SAFETY AND RELIABILITY OF THE SET. PARTS MARKED WITH "Δ" AND PARTS SHADED (IN BLACK) ARE ESPECIALLY IMPORTANT FOR MAINTAINING THE SAFETY AND PROTECTING ABILITY OF THE SET.

BE SURE TO REPLACE THEM WITH PARTS OF SPECIFIED PART NUMBER.

WICHTIGER SICHERHEITSHINWEIS:

IM INTERESSE DER SICHERHEIT UND ZUVERLÄSSIGKEIT SOLLTEN DIE ORIGINALTEILE IMMER VERWENDET WERDEN.

DIE MIT "Δ" BEZEICHNETEN BZW. (SCHWARZ) GESCHATTETEN TEILE SIND BESONDERS WICHTIG SOWHOL FÜR DIE SICHERHEIT ALS AUCH FÜR DIE SICHERE LEISTUNG.

BEIM AUSTAUSCH BITTE IMMER DIE TEILE, WIE VON DEN NUMMERN VORGESCHRIEBEN, VERWENDEN.

SAFETY NOTES:

1. DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING PARTS.
2. SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.

SICHERHEITSHINWEISE:

1. VOR AUSWECHSELN VON TEILEN DEN NETZKABELSTECKER AUS DER NETZSTECKDOSE ZIEHEN.
2. KÜHLKÖRPER VON HALBLEITERN SOLLTEN BEI BETRIEB DES CHASSIS ALS MÖGLICHE URSACHEN ELEKTRISCHER SCHLÄGE BETRACHTET WERDEN.

NOTES:

1. The unit of resistance "ohm" is omitted ($k = 1000 \text{ ohm}$, $M = 1 \text{ Meg ohm}$).
2. All resistors are 1/8 watt, unless otherwise noted.
3. The unit of capacitance "F" is omitted ($\mu = \mu F$, $p = \mu\mu F$).
4. The values in parentheses are the ones in the PB mode; the values without parentheses are the ones in the REC mode.

ANMERKUNGEN:

1. Die Widerstandseinheit "Ohm" wird weggelassen ($k = 1000 \text{ Ohm}$, $M = 1 \text{ Megohm}$).
2. Alle Widerstände haben 1/8 Watt, sofern nicht anders angegeben.
3. Die Kapazitätseinheit "F" wird weggelassen ($\mu = \mu F$, $p = \mu\mu F$).
4. Die in Klammern gesetzten Werte werden in der Wiedergabe-Betriebsart erhalten; die Werte ohne Klammern werden in der Aufnahme-Betriebsart erhalten.

VOLTAGE MEASUREMENT CONDITIONS:

1. DC voltages are measured between points indicated and chassis ground by VTVM, with AC230V/50Hz supplied to unit and all controls are set to normal viewing picture unless otherwise noted.
2. Voltages are measured with $10000\mu V$ B & W or colour signal.

SPANNUNGSMESSBEDINGUNGEN:

1. Gleichspannungen werden zwischen den angegebenen Punkten und der Chassis mit Hilfe eines Röhrenvoltmeters gemessen, wobei dem Gerät 230 V Netzstrom (50 Hz) zugeführt wird und alle Bedienungselemente auf ein normales Bild eingestellt sind, sofern nicht anders angegeben.
2. Spannungen werden mit einem $10000\mu V$ -Schwarzweiß oder Farbsignal gemessen.

WAVEFORM MEASUREMENT CONDITIONS:

$10000\mu V$ 87.5 percent modulated colour bar signal is fed into tuner.

WELLENFORMMESSBEDINGUNGEN:

Ein um 87,5% moduliertes $10000\mu V$ -Farbbalkensignal wird dem Tuner zugeleitet.

CAUTION:

This circuit diagram is original one. Therefore there may be a slight difference from yours.

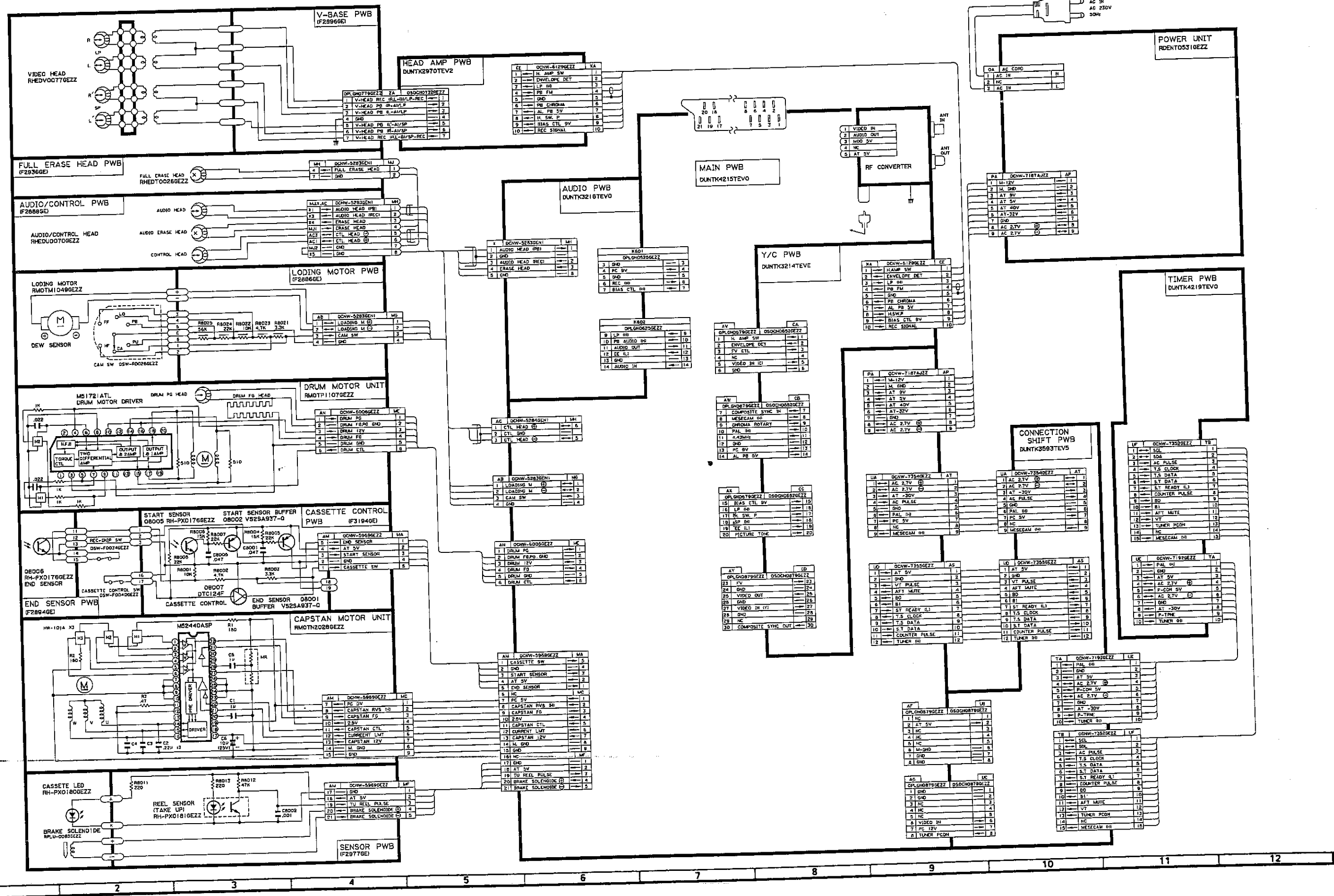
ANMERKUNG:

Dieses Leitungsschema ist das originale. Daher kann es von ihrem Leitungsschema etwas verschieden sein.

VC-A51GM(GY)
VC-A51SM(GY)
VC-A51YM(GY)

VC-A51GM(GY)
VC-A51SM(GY)
VC-A51YM(GY)

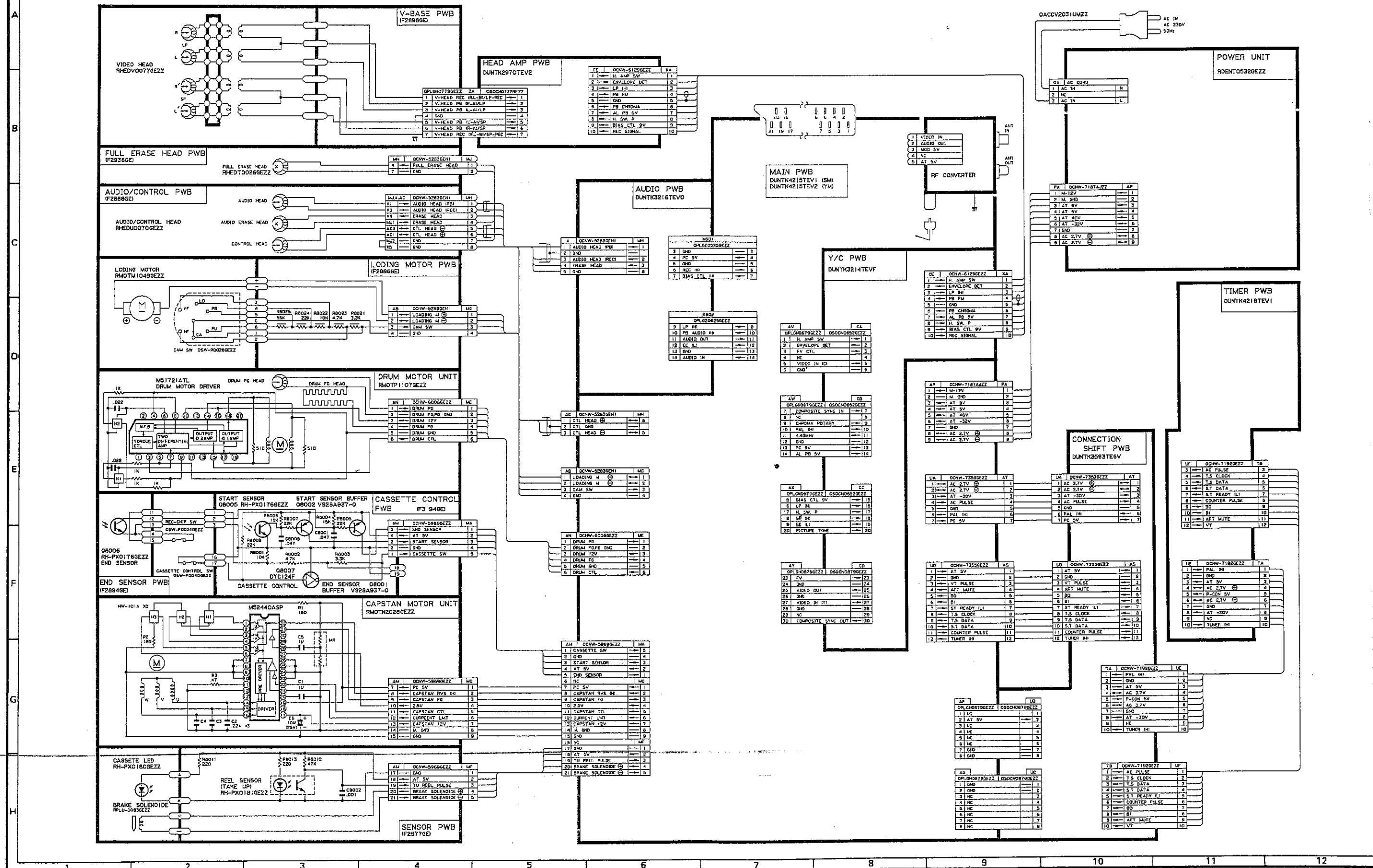
OVERALL DIAGRAM (VC-A51GM(GY)) GESAMTSCHALTPLAN (VC-A51GM(GY))



OVERALL DIAGRAM (VC-A51SM(GY), VC-A51YM(GY)) GESAMTSCHALTPLAN (VC-A51SM(GY), VC-A51YM(GY))

VC-A51GM(GY)
VC-A51SM(GY)
VC-A51YM(GY)

VC-A51GM(GY)
VC-A51SM(GY)
VC-A51YM(GY)



MAIN CIRCUIT 1 (VC-A51GM(GY)) HAUPTSCHALTUNG 1 (VC-A51GM(GY))

VC-A51GM(GY)
VC-A51SM(GY)
VC-A51YM(GY)

VC-A51GM(GY)
VC-A51SM(GY)
VC-A51YM(GY)

⇒ Drum Error Voltage
Trommel-Fehlerspannung

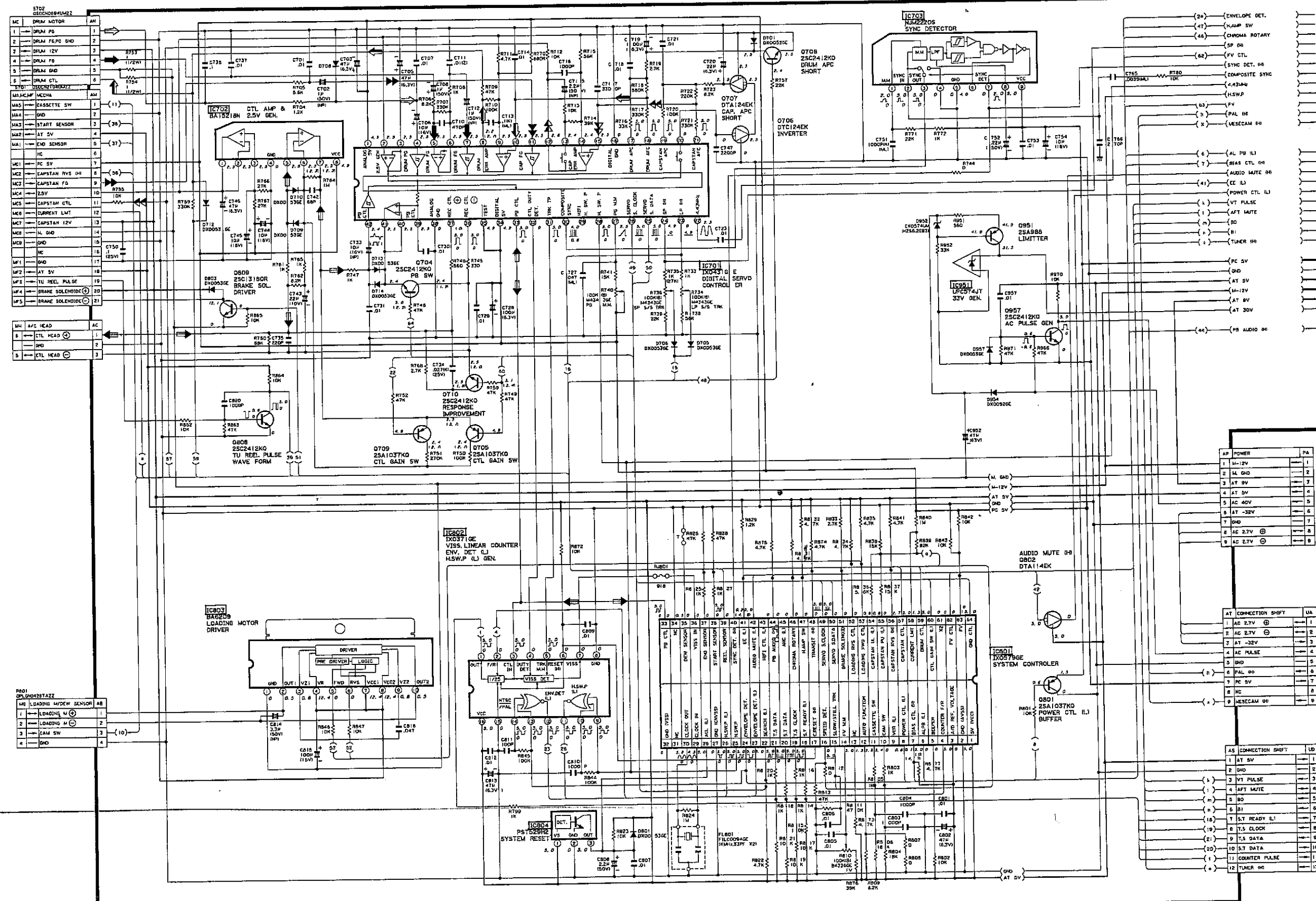
⇒ Drum Frequency Comparison Signal
Trommel-Frequenzbezugssignal

⇒ Capstan Error Voltage
Antriebsachsenfehlerspannung

⇒ Capstan Frequency Comparison Signal
Antriebsachsen-Frequenzbezugssignal

⇒ Drum Phase Comparison Signal
Trommel-Phase-Vergleichssignal

⇒ Playback Control Comparison Signal
Wiedergabe-Steuer-Vergleichssignal



* VOLTAGE MEASUREMENT MODE
PB Parentheses ()
REC Without Parentheses

* SPANNUNGSMESSMETHODE
WIEDERGABE Runde Klammern ()
AUFNAHME Ohne runde Klammern

MAIN CIRCUIT 2 (VC-A51GM(GY)) HAUPTSCHALTUNG 2 (VC-A51GM(GY))

VC-A51GM(GY)
VC-A51SM(GY)
VC-A51VM(GY)

VC-A51GM(GY)
VC-A51SM(GY)
VC-A51VM(GY)

Playback Chrominance Signal
Wiedergabe-Chrominanzsignal

Audio Playback Signal
Tonwiedergabesignal

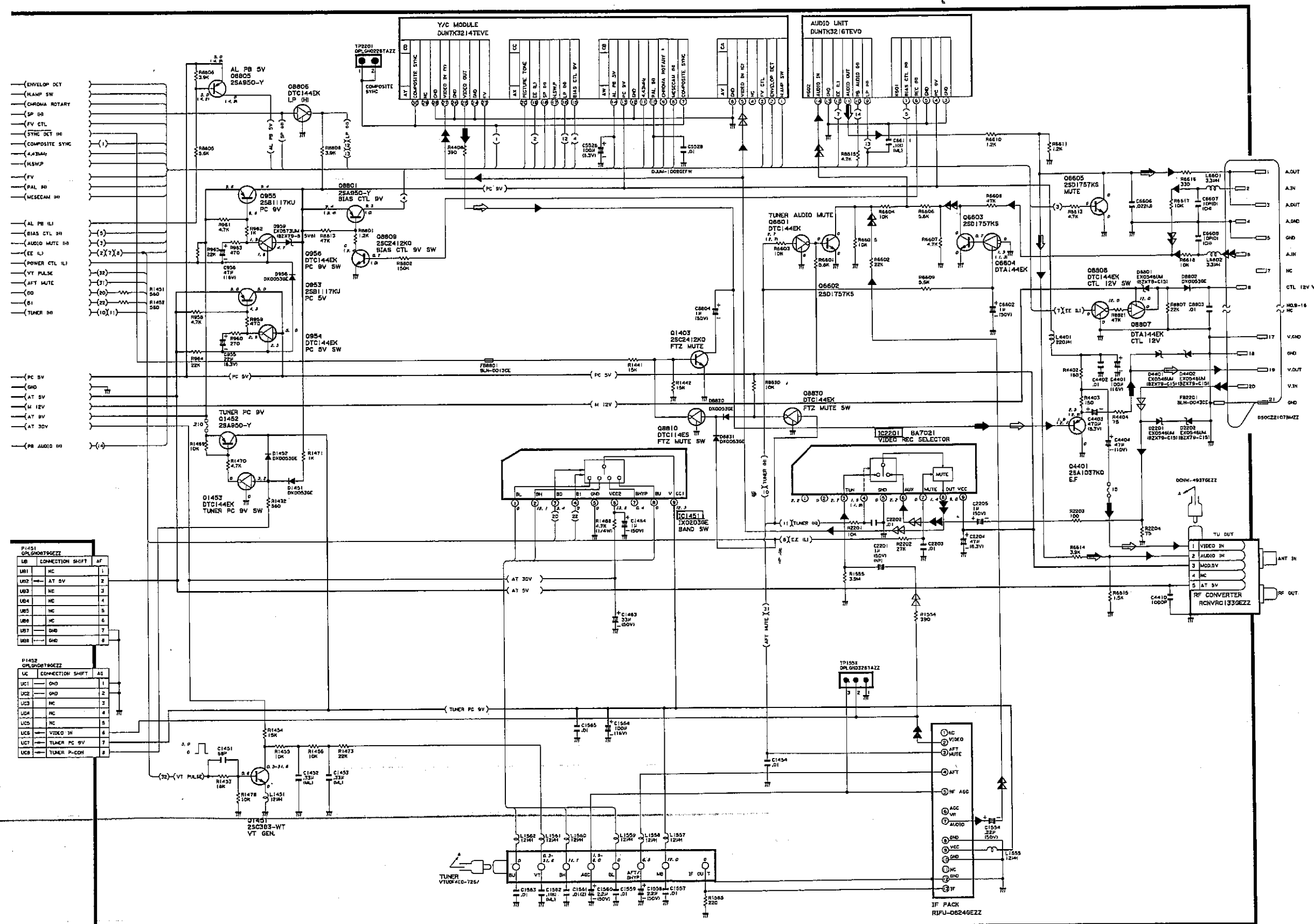
Playback Luminance Signal
Wiedergabe-Luminanzsignal

Audio Recording Signal
Tonaufzeichnungssignal

Recording Chrominance Signal
Aufzeichnungs-Chrominanzsignal

E-E Signal
EE-Signal

Recording Luminance Signal
Aufzeichnungs-Luminanzsignal



UN	CONNECTION	SHIFT	AF
UN1	NC	1	
UN2	AT 5V	2	
UN3	NC	3	
UN4	NC	4	
UN5	NC	5	
UN6	NC	6	
UN7	NC	7	
UN8	NC	8	

UN	CONNECTION	SHIFT	AS
UN1	NC	1	
UN2	NC	2	
UN3	NC	3	
UN4	NC	4	
UN5	NC	5	
UN6	NC	6	
UN7	NC	7	
UN8	NC	8	

* VOLTAGE MEASUREMENT MODE
PB Parentheses ()
REC Without Parentheses

* SPANNUNGSMESSMETHODE
WIEDERGABE Runde Klammern ()
AUFNAHME Ohne runde Klammern

MAIN CIRCUIT 1 (VC-A51SM(GY), VC-A51YM(GY)) HAUPTSCHALTUNG 1 (VC-A51SM(GY), VC-A51YM(GY))

VC-A51GM(GY)
VC-A51SM(GY)
VC-A51YM(GY)

VC-A51GM(GY)
VC-A51SM(GY)
VC-A51YM(GY)
Drum Error Voltage
Trommel-Fehlerspannung

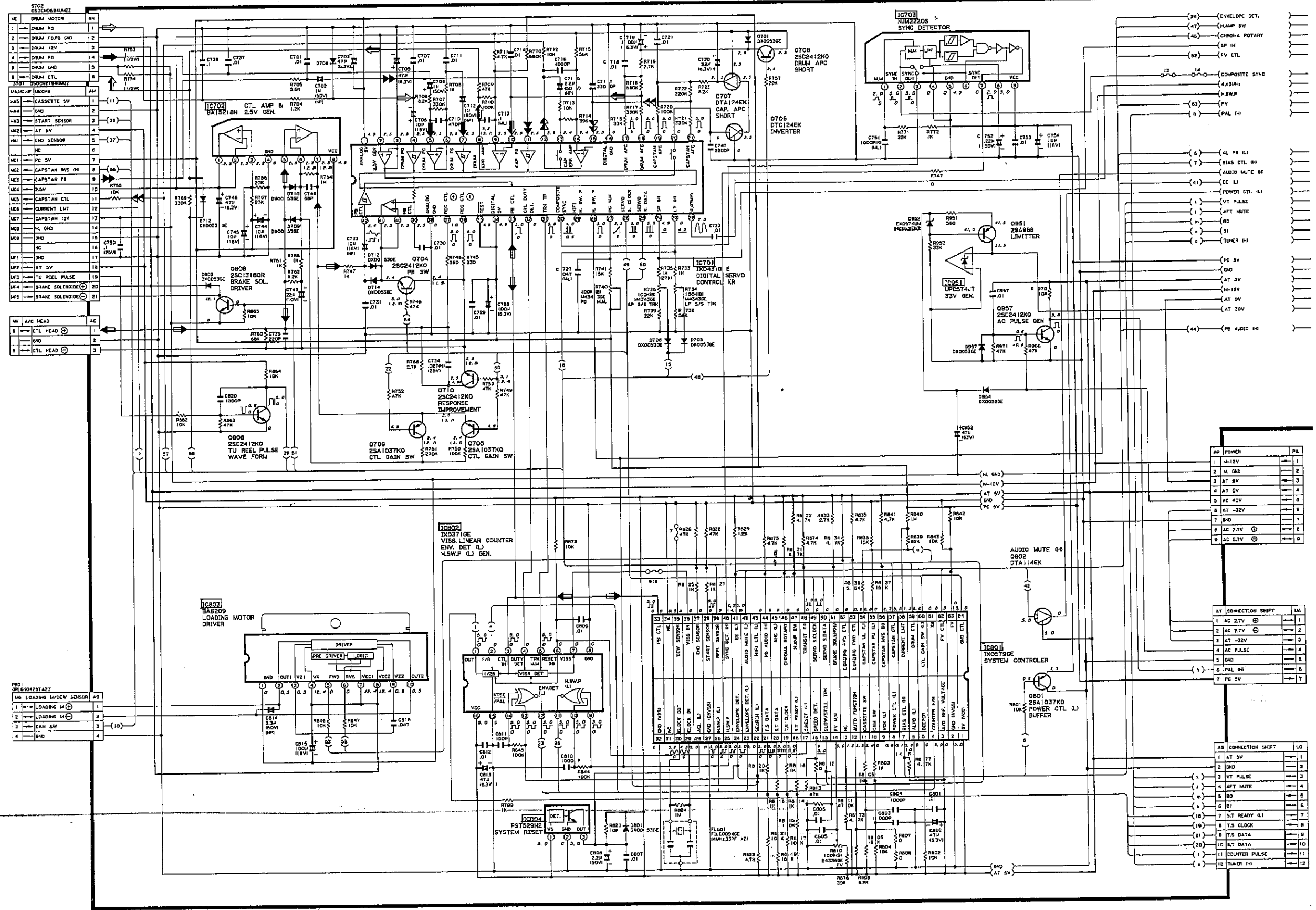
Drum Frequency Comparison Signal
Trommel-Frequenzbezugssignal

Capstan Error Voltage
Antriebsachsenfehlerspannung

Capstan Frequency Comparison Signal
Antriebsachsen-Frequenzbezugssignal

Drum Phase Comparison Signal
Trommel-Phase-Vergleichssignal

Playback Control Comparison Signal
Wiedergabe-Steuer-Vergleichssignal



* VOLTAGE MEASUREMENT MODE
PB Parentheses ()
REC Without Parentheses

21

* SPANNUNGSMESSMETHODE
WIEDERGABE Runde Klammern ()
AUFNAHME Ohne runde Klammern

22

MAIN CIRCUIT 2 (VC-A51SM(GY), VC-A51YM(GY)) HAUPTSCHALTUNG 2 (VC-A51SM(GY), VC-A51YM(GY))

VC-A51GM(GY)
VC-A51SM(GY)
VC-A51YM(GY)

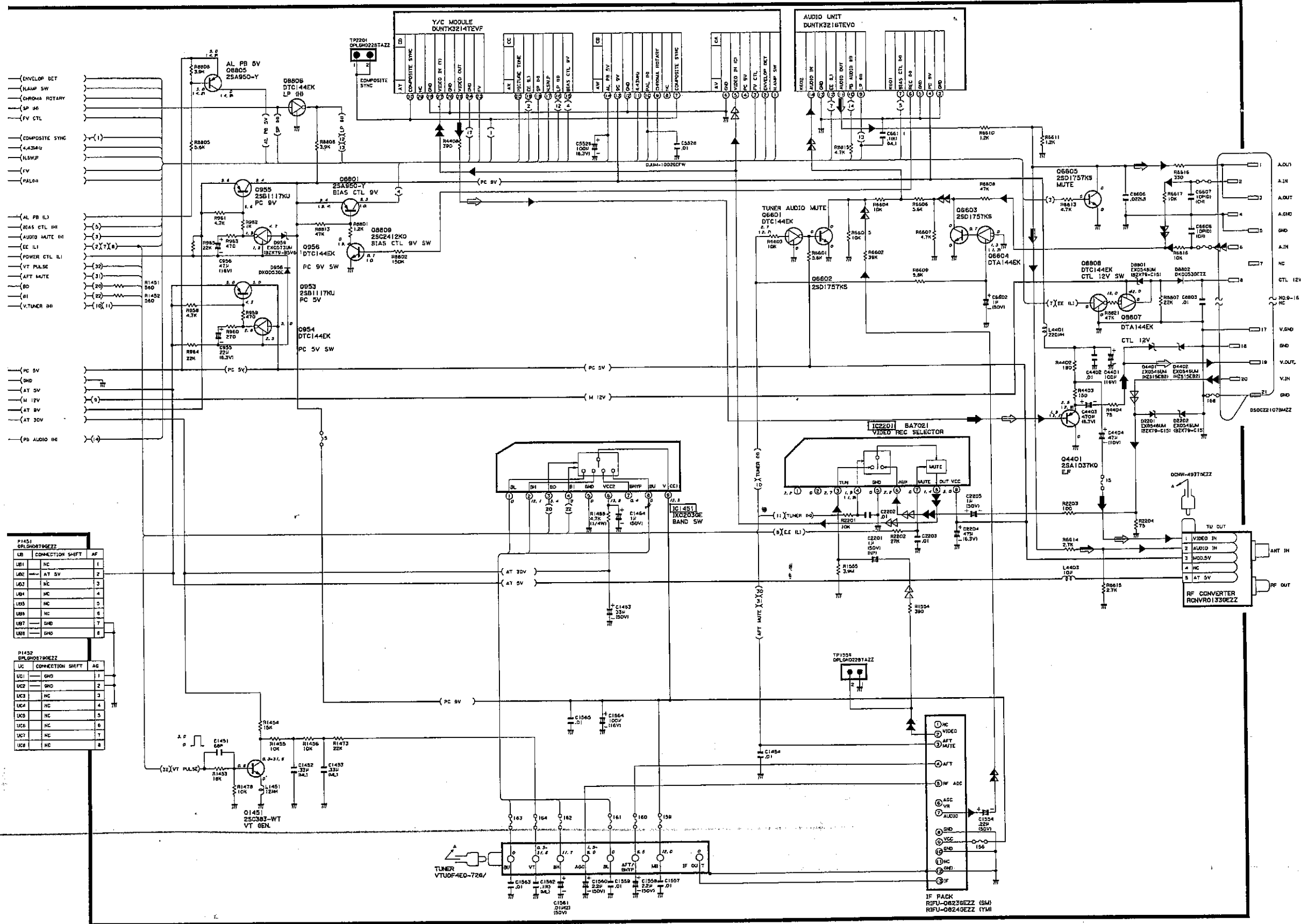
VC-A51GM(GY)
VC-A51SM(GY)
VC-A51YM(GY)

Playback Chrominance Signal
Wiedergabe-Chrominanzsignal
Playback Luminance Signal
Wiedergabe-Luminanzsignal

Recording Chrominance Signal
Aufzeichnungs-Chrominanzsignal
Recording Luminance Signal
Aufzeichnungs-Luminanzsignal

Audio Playback Signal
Tonwiedergabesignal
E-E Signal
EE-Signal

Audio Recording Signal
Tonaufzeichnungssignal



UC	CONNECTION	SHIFT	AG
UC1	NC	1	
UC2	NC	2	
UC3	NC	3	
UC4	NC	4	
UC5	NC	5	
UC6	NC	6	
UC7	NC	7	
UC8	NC	8	

* VOLTAGE MEASUREMENT MODE
PB Parentheses ()
REC Without Parentheses

* SPANNUNGSMESSMETHODE
WIEDERGABE Runde Klammern ()
AUFNAHME Ohne runde Klammern

Y/C CIRCUIT (VC-A51GM(GY)) Y/C-SCHALTUNG (VC-A51GM(GY))

VC-A51GM(GY)
VC-A51SM(GY)
VC-A51YM(GY)

VC-A51GM(GY)
VC-A51SM(GY)
VC-A51YM(GY)

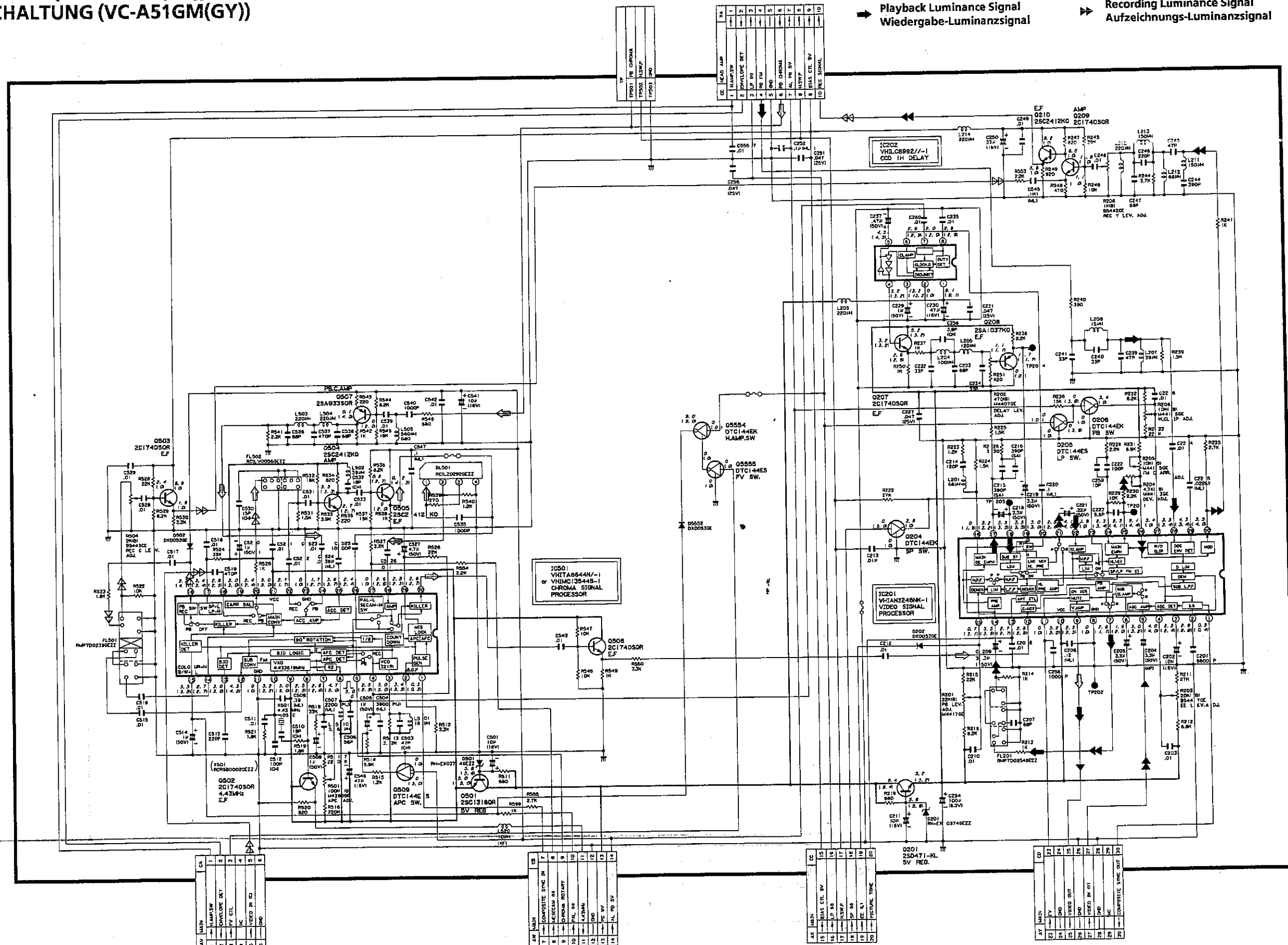
Playback Chrominance Signal
Wiedergabe-Chrominanzsignal

Recording Chrominance Signal
Aufzeichnungs-Chrominanzsignal

E-E Signal
EE-Signal

Playback Luminance Signal
Wiedergabe-Luminanzsignal

Recording Luminance Signal
Aufzeichnungs-Luminanzsignal



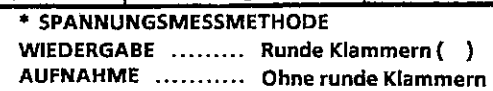
* VOLTAGE MEASUREMENT MODE
PB Parentheses ()
REC Without Parentheses

25

* SPANNUNGSMESSMETHODE
WIEDERGABE Runde Klammern ()
AUFNAHME Ohne runde Klammern

26

EE Signal
EE-Signal

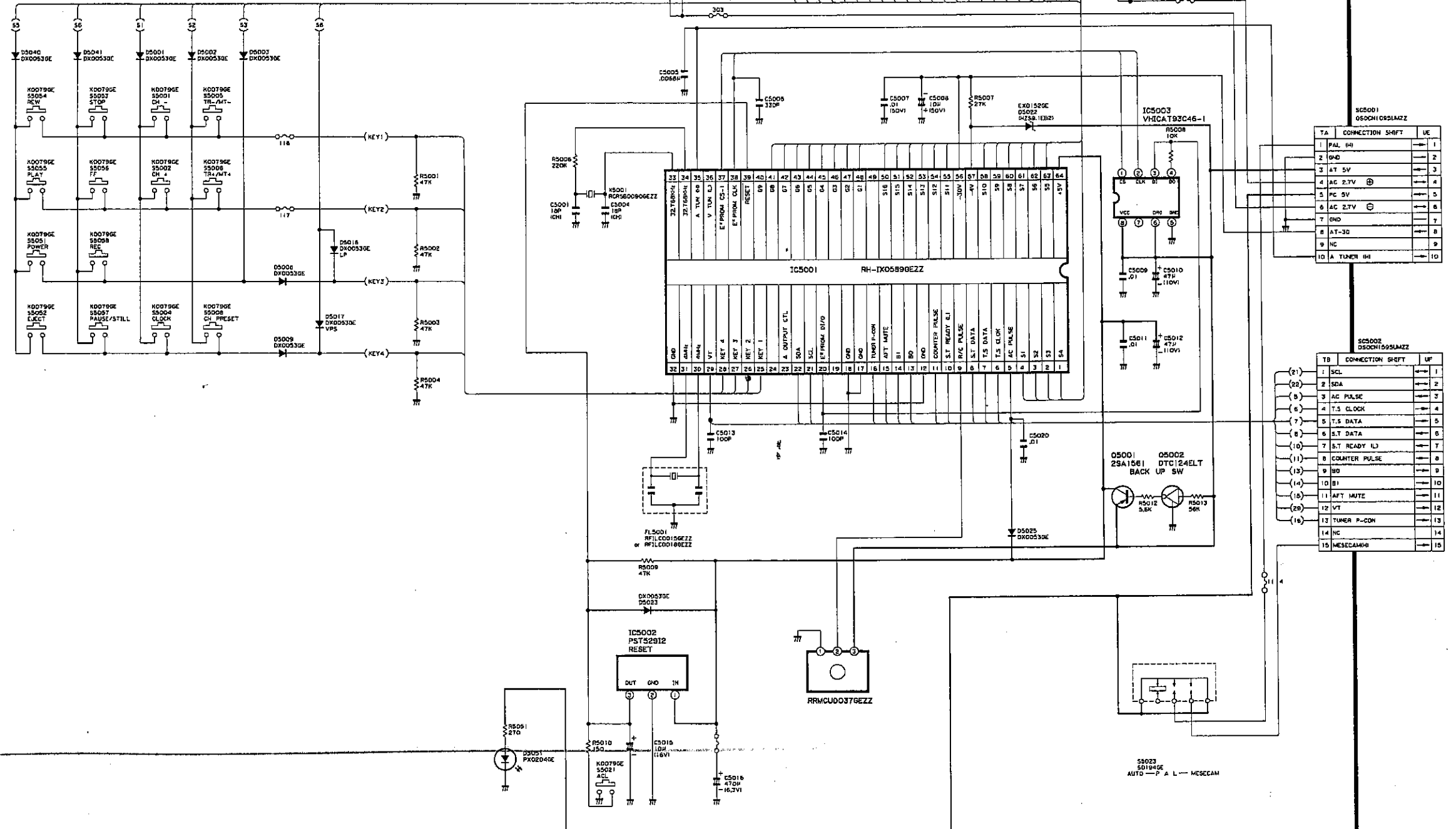
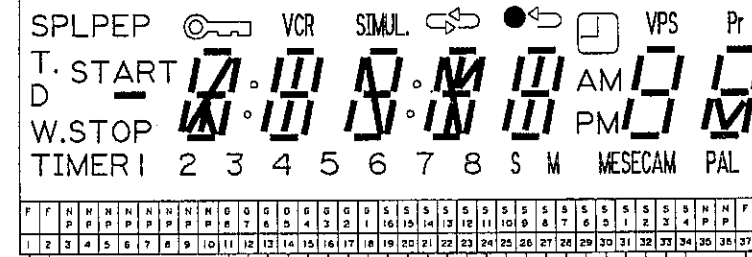


VC-A51GM(GY)
VC-A51SM(GY)
VC-A51YM(GY)

VC-A51GM(GY)
VC-A51SM(GY)
VC-A51YM(GY)

TIMER CIRCUIT (VC-A51GM(GY)) ZEITSCHALTUHRSCALTUNG (VC-A51GM(GY))

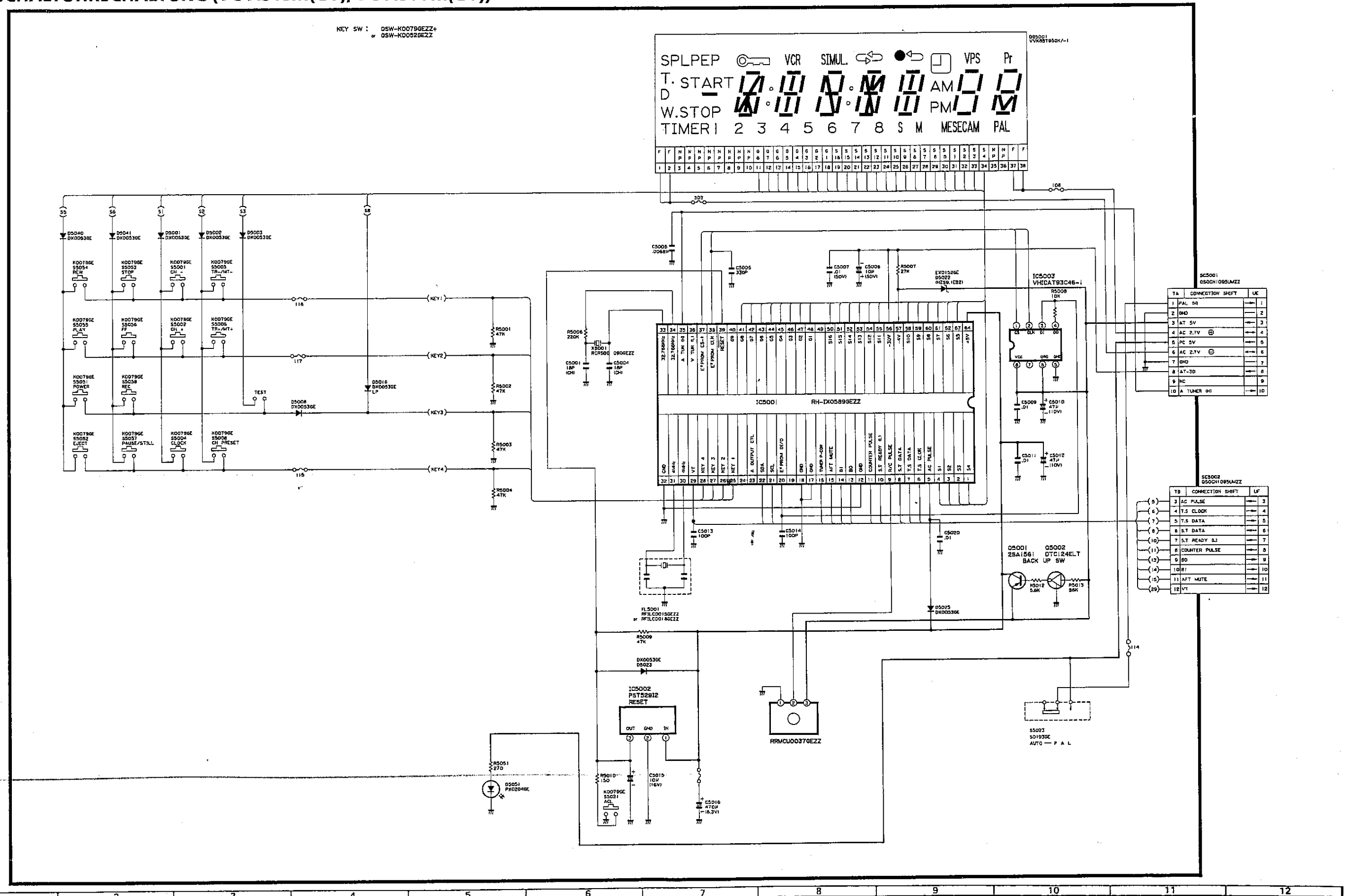
KEY SW : 05W-K00790EZZ+
05W-K00526EZZ



VC-A51GM(GY)
VC-A51SM(GY)
VC-A51YM(GY)

VC-A51GM(GY)
VC-A51SM(GY)
VC-A51YM(GY)

TIMER CIRCUIT (VC-A51SM(GY), VC-A51YM(GY)) ZEITSCHALTUHRSCALTUNG (VC-A51SM(GY), VC-A51YM(GY))



HEAD AMPLIFIER CIRCUIT KOPFVERSTÄRKERSCHALTUNG

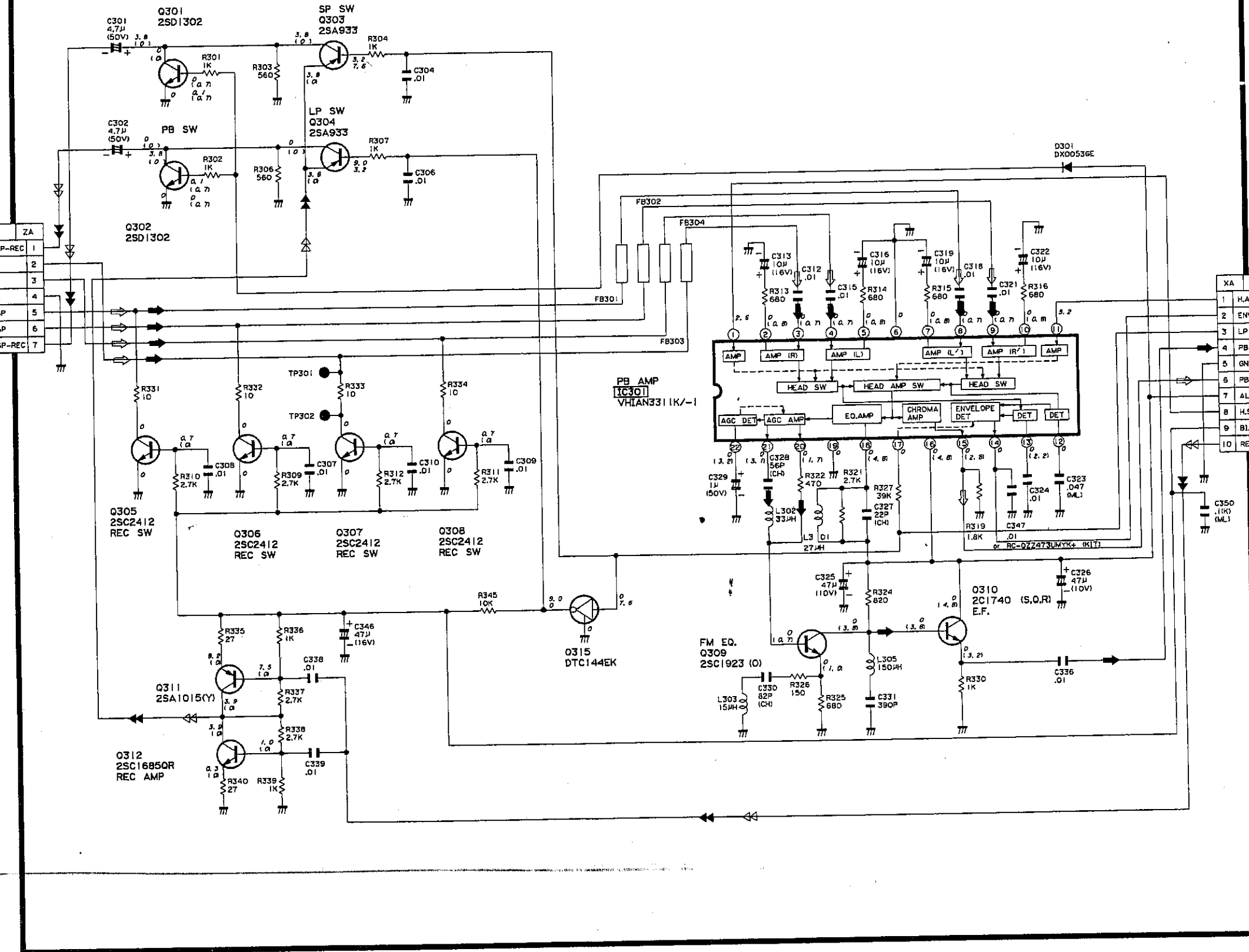
⇒ Playback Chrominance Signal
Wiedergabe-Chrominanzsignal

⇒ Playback Luminance Signal
Wiedergabe-Luminanzsignal

⇒ Recording Chrominance Signal
Aufzeichnungs-Chrominanzsignal

⇒ Recording Luminance Signal
Aufzeichnungs-Luminanzsignal

VIDEO HEAD	ZA
ZA1 → V.HEADRL-BI/LP-REC	1
ZA2 → V.HEADIR-AI/LP	2
ZA3 → V.HEADIL-AI/LP	3
ZA4 → GND	4
ZA5 → V.HEADIL-AI/SP	5
ZA6 → V.HEADIR-AI/SP	6
ZA7 → V.HEADRL-BI/SP-REC	7



XA	Y/C	CE
1	HAMP SW	1
2	ENVELOPE DET	2
3	LP (H)	3
4	PB FM	4
5	GND	5
6	PB CHROMA	6
7	AL PB 5V	7
8	H.S.W.P	8
9	BIAS CTL 9V	9
10	REC SIGNAL	10

* VOLTAGE MEASUREMENT MODE
PB Parentheses ()
REC Without Parentheses

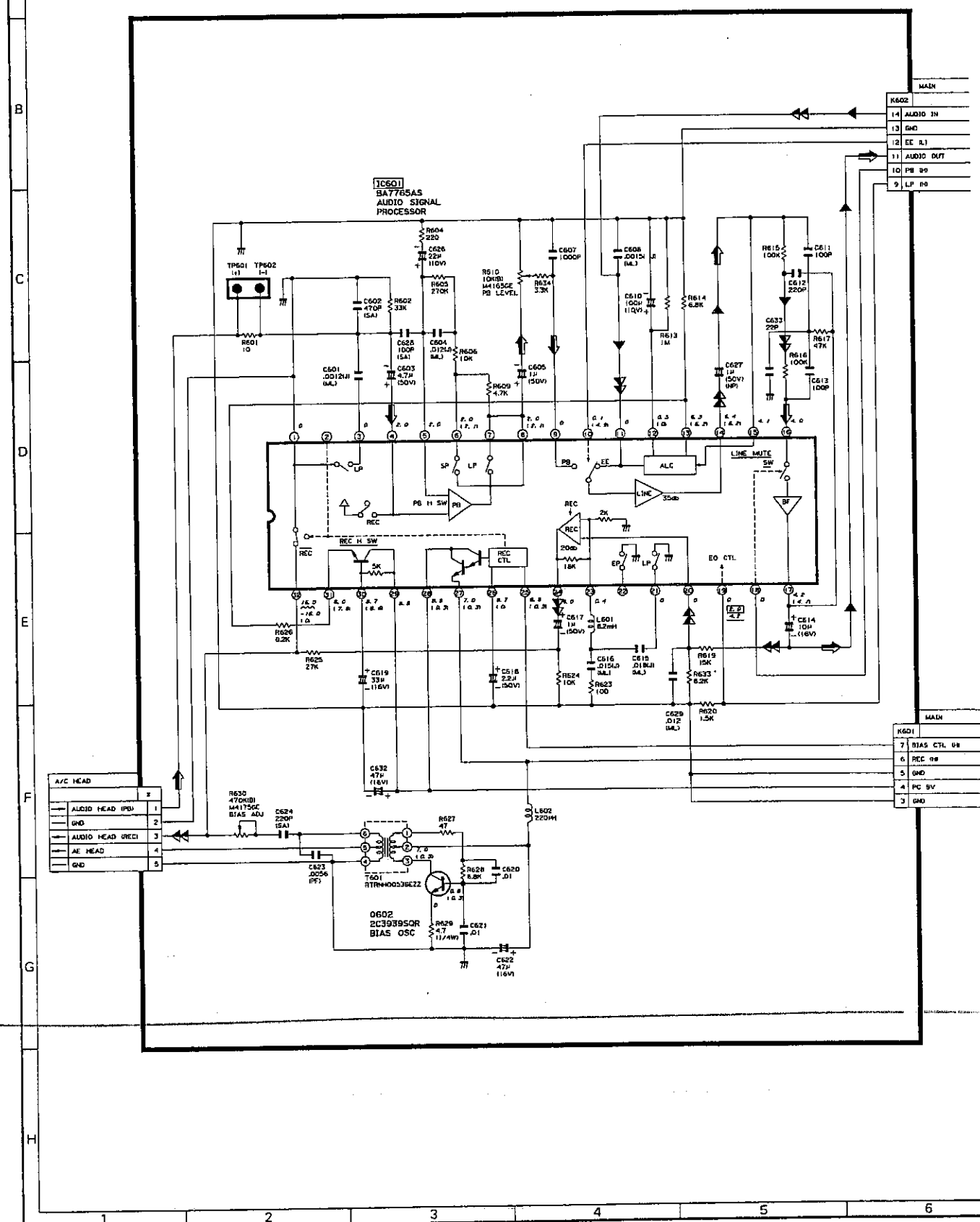
33

* SPANNUNGSMESSMETHODE
WIEDERGABE Runde Klammern ()
AUFNAHME Ohne runde Klammern

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AUDIO CIRCUIT
TONSCHALTUNG

- ⇒ Audio Playback Signal
Tonwiedergabesignal
- Audio Recording Signal
Tonaufzeichnungssignal
- E-E Signal
EE-Signal



* VOLTAGE MEASUREMENT MODE

PB Parentheses ()

REC Without Parentheses

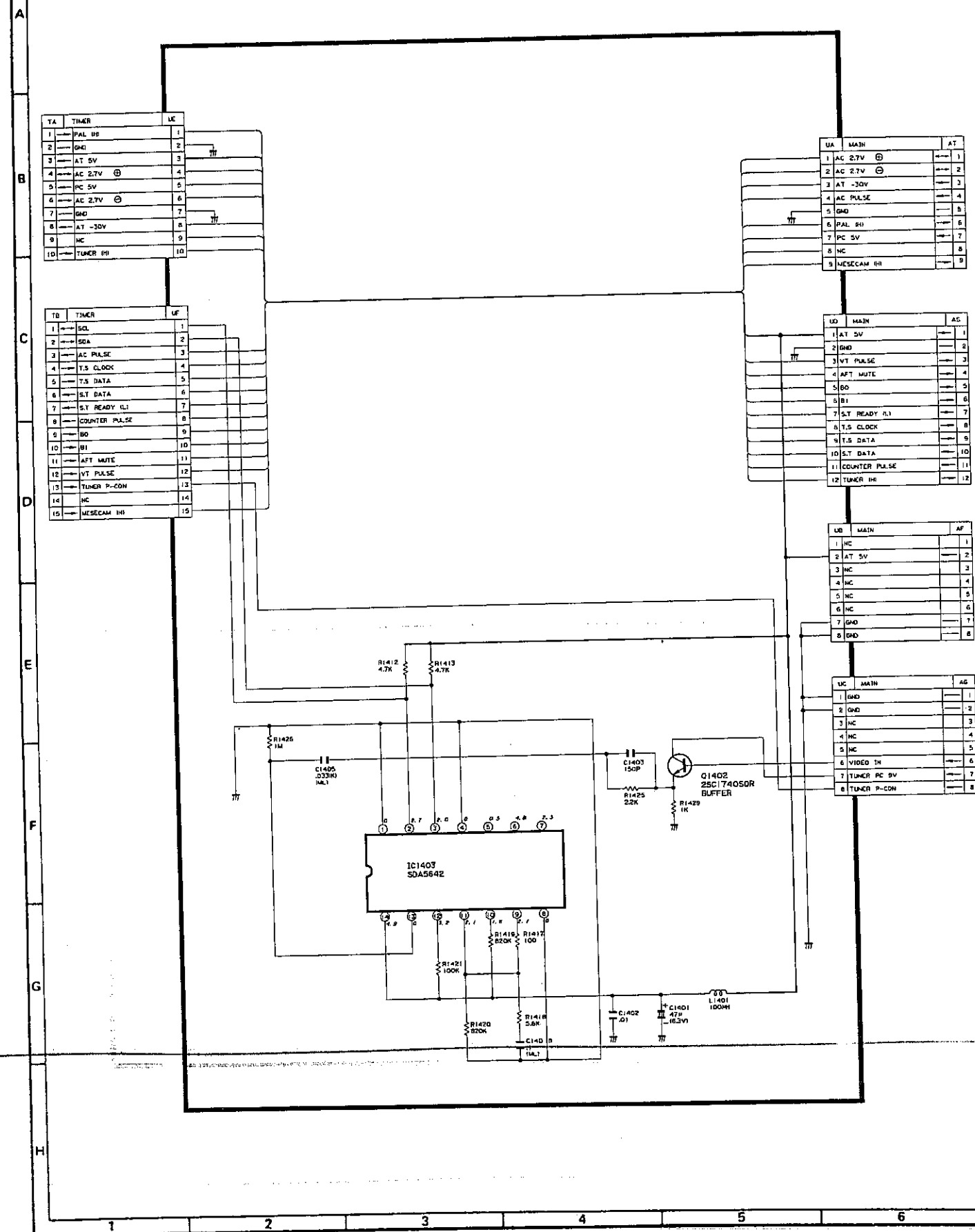
35

* SPANNUNGSMESSMETHODE

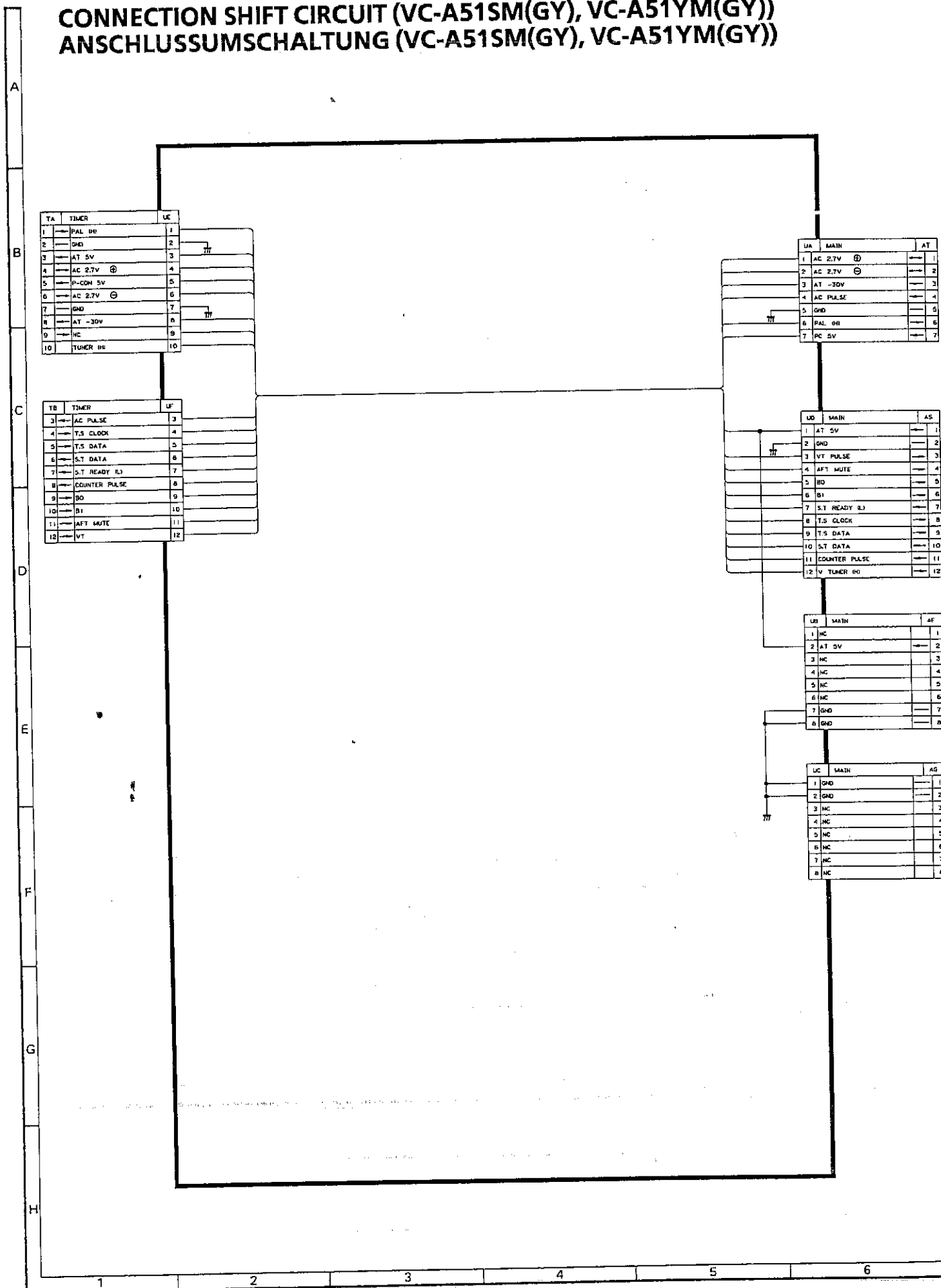
WIEDERGABE Runde Klammern ()

AUFNAHME Ohne runde Klammern

CONNECTION SHIFT CIRCUIT (VC-A51GM(GY)) ANSCHLUSSUMSCHALTUNG (VC-A51GM(GY))

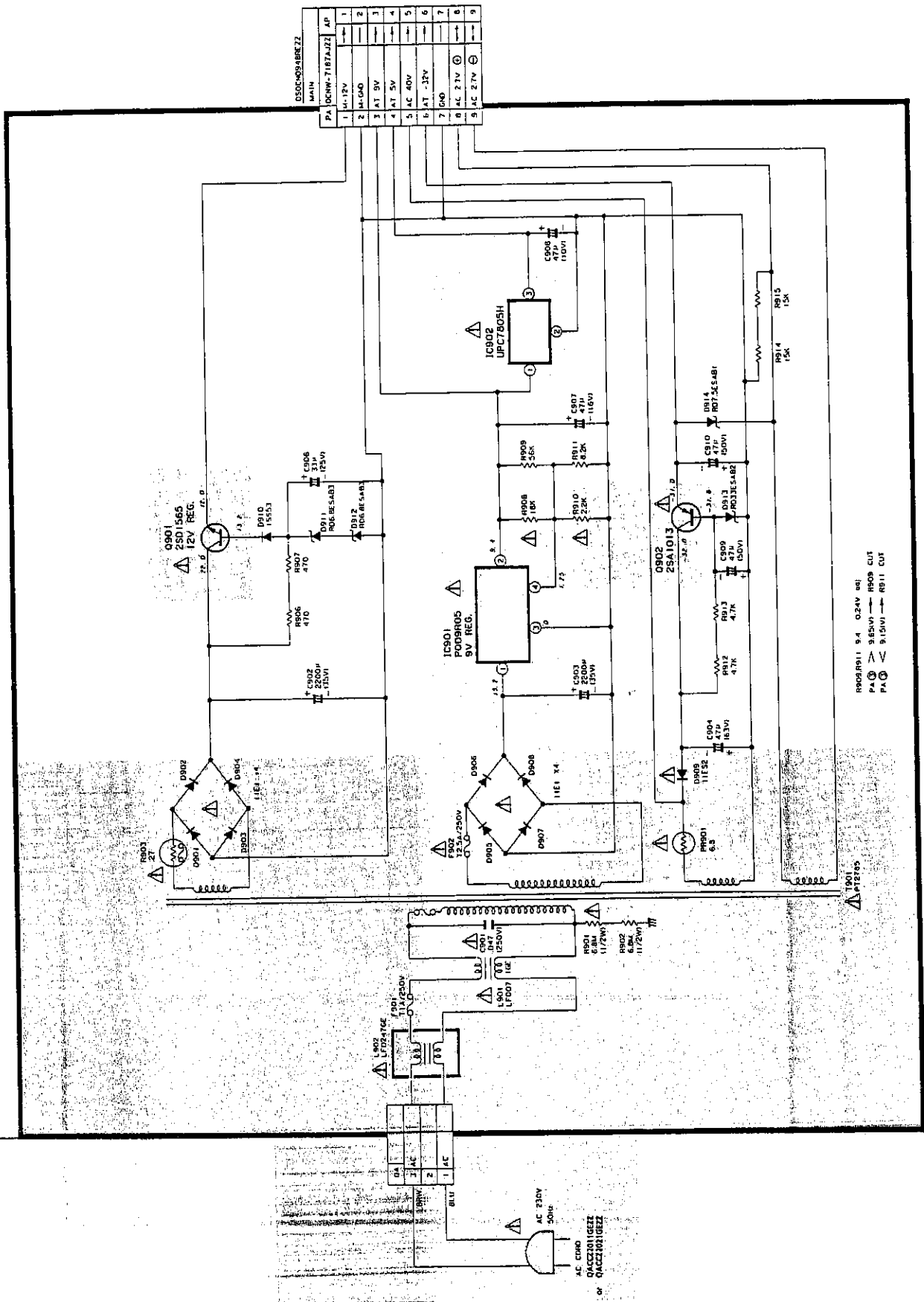


CONNECTION SHIFT CIRCUIT (VC-A51SM(GY), VC-A51YM(GY)) ANSCHLUSSUMSCHALTUNG (VC-A51SM(GY), VC-A51YM(GY))



VC-A51GM(GY)
VC-A51SM(GY)
VC-A51YM(GY)

POWER CIRCUIT (VC-A51GM(GY)) HAUPTSTROMKREISSCHALTUNG (VC-A51GM(GY))



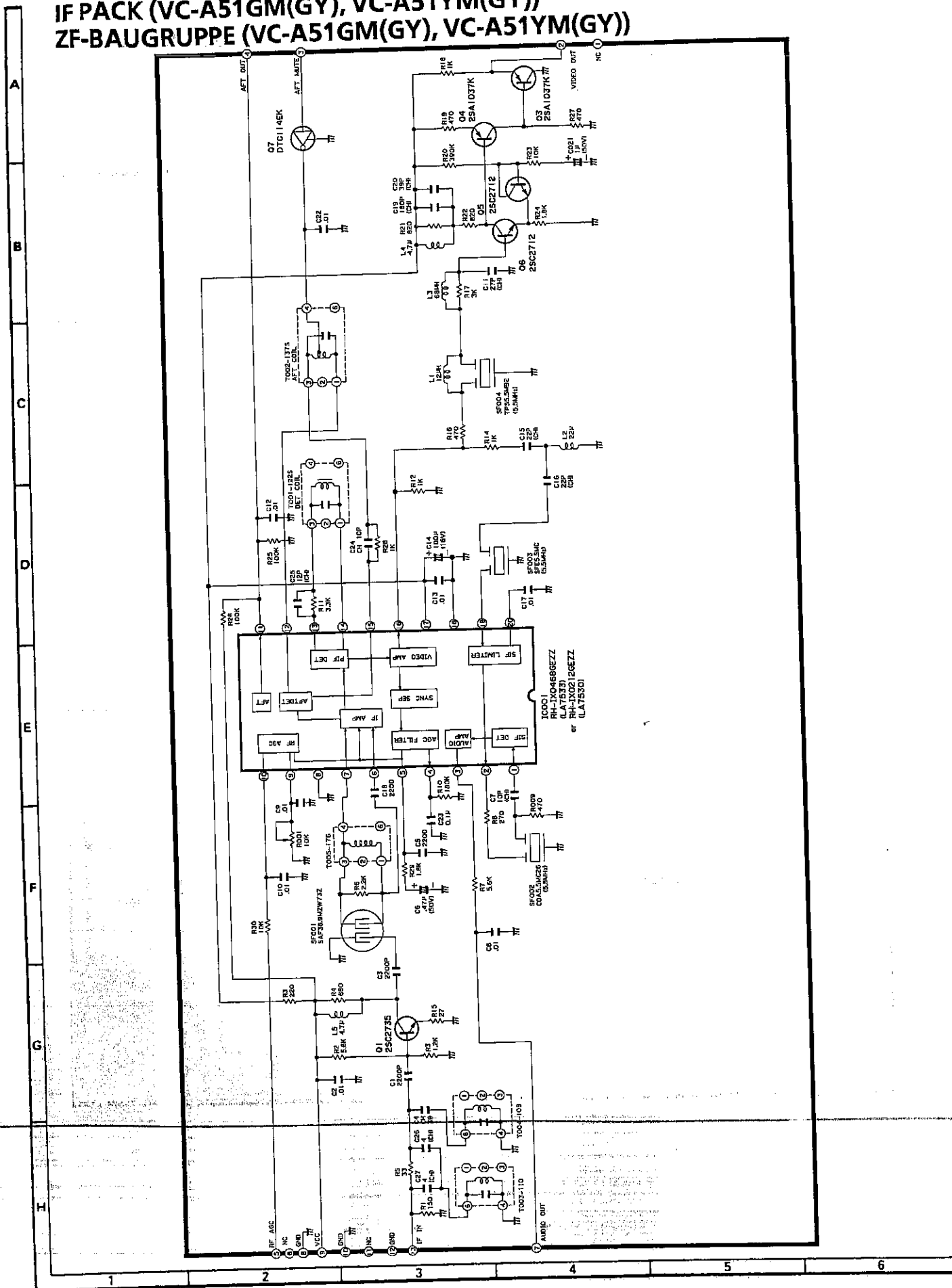
VC-A51GM(GY)
VC-A51SM(GY)
VC-A51YM(GY)

VC-A51GM(GY)
VC-A51SM(GY)
VC-A51YM(GY)

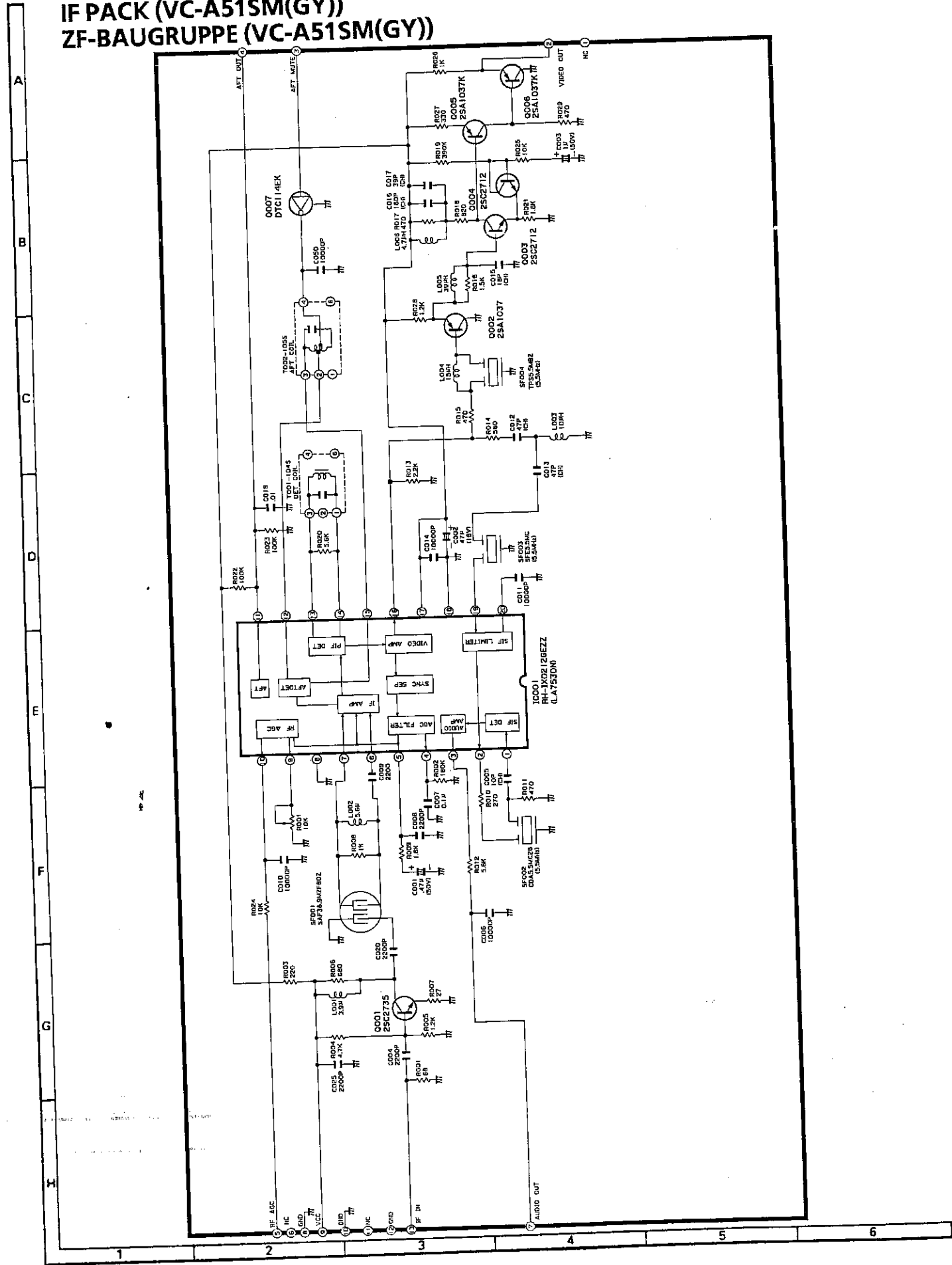
7 IF P



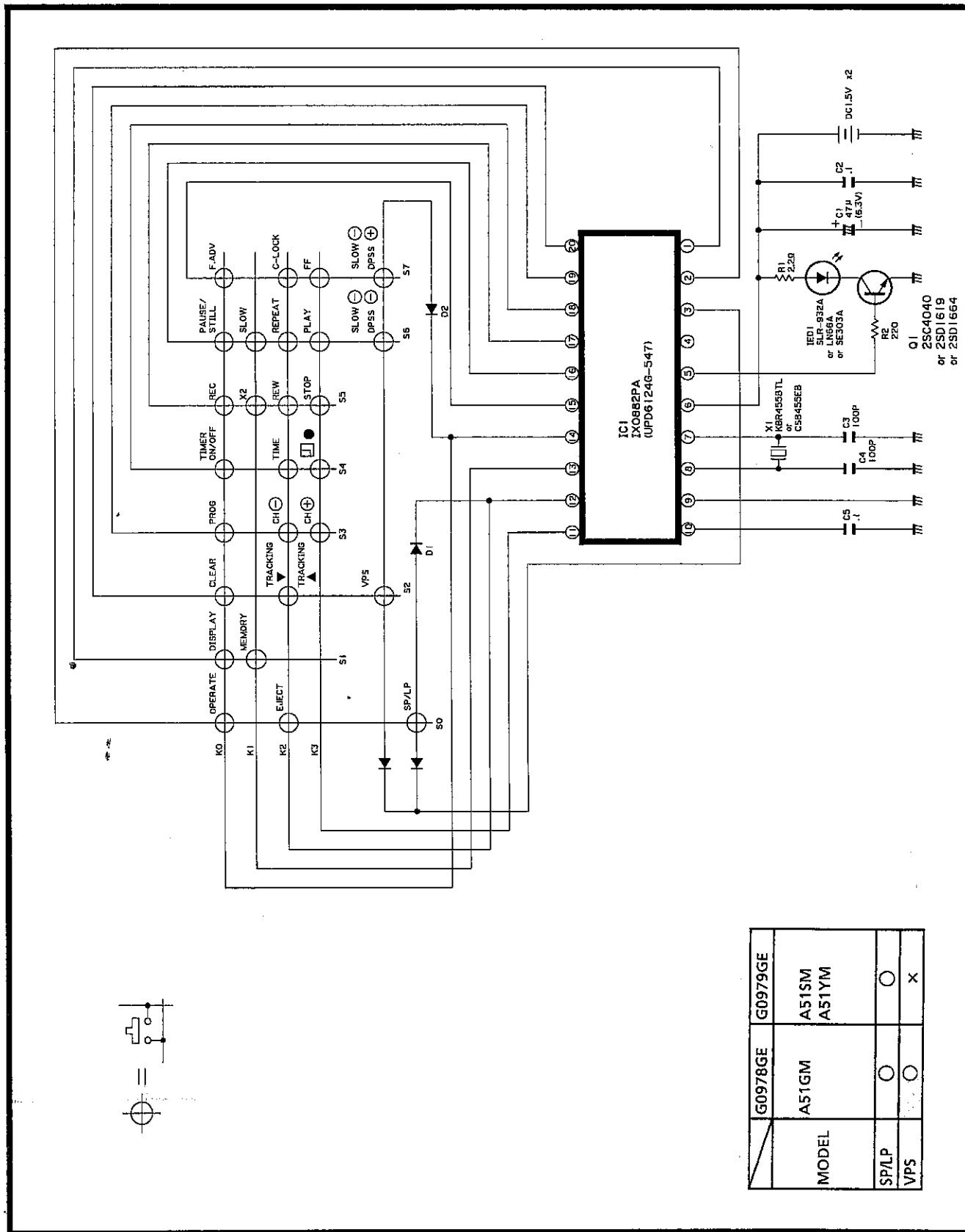
IF PACK (VC-A51GM(GY), VC-A51YM(GY)) ZF-BAUGRUPPE (VC-A51GM(GY), VC-A51YM(GY))



IF PACK (VC-A51SM(GY)) ZF-BAUGRUPPE (VC-A51SM(GY))



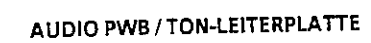
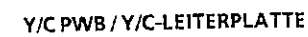
INFRARED REMOTE CONTROL UNIT INFRAROTFERNBEDIENUNGSSCHALTUNG

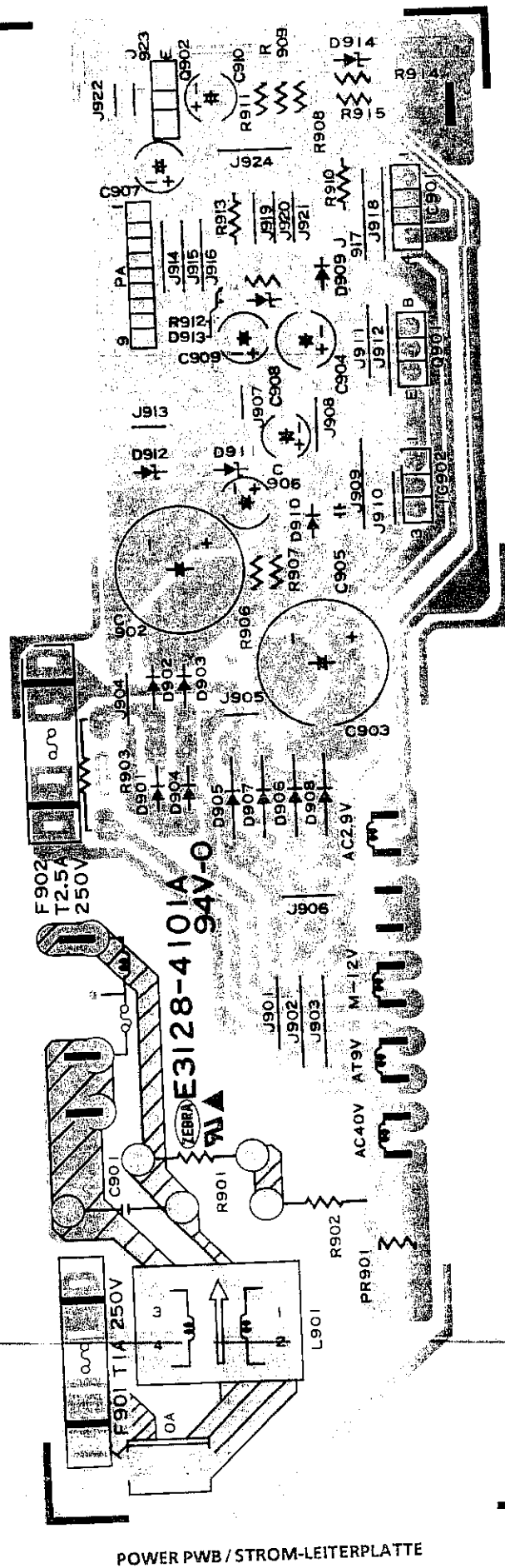
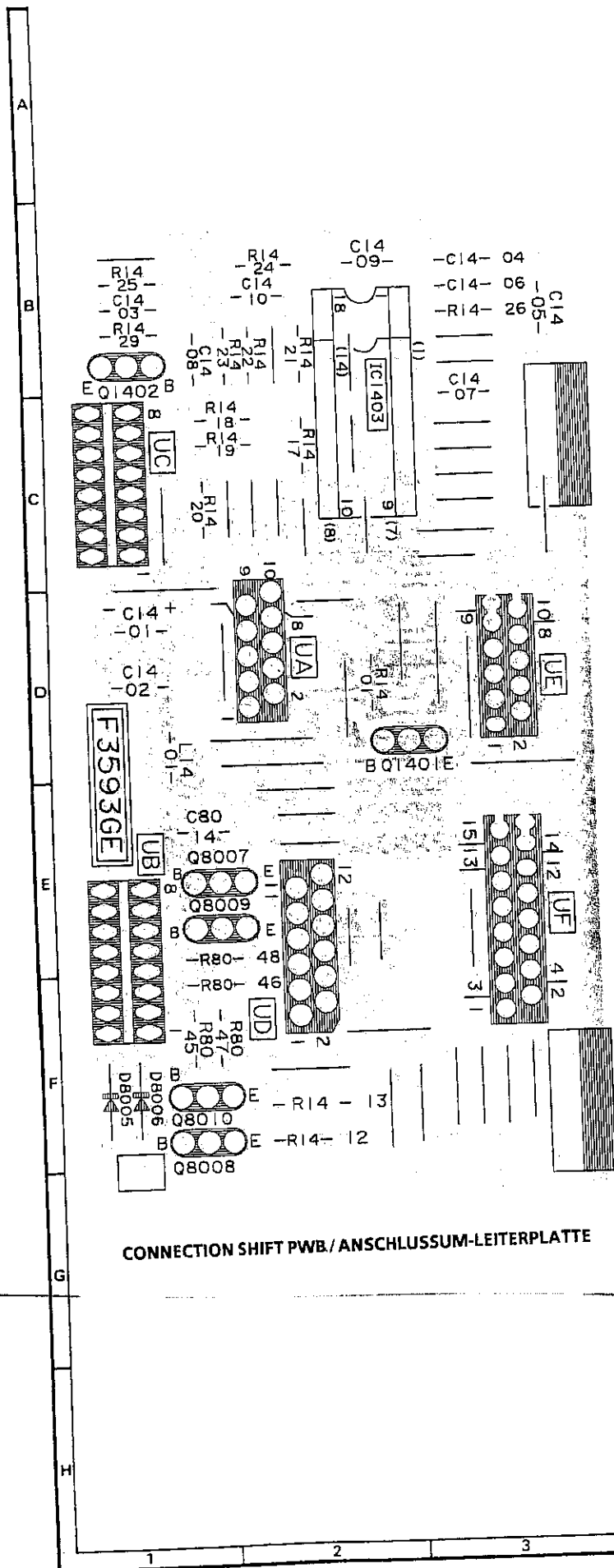


MAIN PWB
HAUPT-LEITERPLATTE

F4215GE

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REPLACEMENT PARTS LIST

PARTS REPLACEMENT

Many electrical and mechanical parts in video cassette recorder have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by Δ and shaded areas in the Replacement Parts Lists and Schematic Diagrams. The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

- | | |
|-----------------|----------------|
| 1. MODEL NUMBER | 2. REF. NO. |
| 3. PART NO. | 4. DESCRIPTION |
| 5. PRICE CODE | |

Δ MARK: SAFETY RELATED PARTS

★ MARK: SPARE PARTS-DELIVERY SECTION

PWB ASSEMBLY IS NOT REPLACEMENT ITEM

Ref. No.	Part No.	*	Description	Code
----------	----------	---	-------------	------

MAIN (SERVO, SYSTEM-CONTROL, TUNER) CIRCUIT

- | | | |
|---------------|-----------------------|---|
| DUNTK4215TEV0 | - Main Board Assembly | — |
| | (VC-A51GM(GY)) | |
| DUNTK4215TEV1 | - Main Board Assembly | — |
| | (VC-A51SM(GY)) | |
| DUNTK4215TEV2 | - Main Board Assembly | — |
| | (VC-A51YM(GY)) | |

TRANSISTORS

- | | | | | |
|-------|---------------|---|----------------|----|
| Q704, | VS2SC2412KQ-1 | J | 2SC2412KQ | AA |
| 708, | | | | |
| 710, | | | | |
| 808, | | | | |
| 957, | | | | |
| 1403, | | | (VC-A51GM(GY)) | |
| 8809 | | | | |

Ref. No.	Part No.	*	Description	Code
Q705,	VS2SA1037KQ-1	J	2SA1037KQ	AA
709,				
801,				
4401				
Q706	VSDTC124EK/-1	J	DTC124EK	AB
Q707	VSDTA124EK/-1	J	DTA124EK	AB
Q802	VSDTA114EK/-1	J	DTA114EK	AB
Q809	VS2SC1318QR-1	J	2SC1318QR	AA
Q951	VS2SA988///1E	J	2SA988	AB
Q953,	VS2SB1117KU1E	J	2SB1117KU	AE
955				
Q954,	VSDTC144EK/-1	J	DTC144EK	AB
956,				
1453,			(VC-A51GM(GY))	
6601,				
8806,				
8808,				
8830			(VC-A51GM(GY))	
Q1451	VS2SC383-WT-1	J	2SC383TM	AE
Q1452,	VS2SA950-Y/1E	J	2SA950-Y	AD
			(VC-A51GM(GY))	
8801,				
8805				
Q6602,	VS2SD1757KS-1	J	2SD1757KS	AC
6603,				
6605				
Q6604,	VSDTA144EK/-1	J	DTA144EK	AC
8807				
Q8810	VSDTC114ES/-1	J	DTC114ES	AB
			(VC-A51GM(GY))	

INTEGRATED CIRCUITS

- | | | | |
|--------|---------------|---|----|
| IC701 | RH-IX0431GEZZ | J | AS |
| IC702 | VHIBA15218N-1 | J | AD |
| IC703 | VHINJM2220S-1 | J | AG |
| IC801 | RH-IX0579GEZZ | J | AW |
| IC802 | RH-IX0371GEZZ | J | AL |
| IC803 | VHIBA6209//1E | J | AG |
| IC804 | VHIPST529H2-1 | J | AD |
| IC951 | VHIUPC574JT-1 | J | AC |
| IC1451 | RH-IX0203GEZZ | J | AE |
| IC2201 | VHIBA7021//1E | J | AE |

Ref. No.	Part No.	*	Description	Code	Ref. No.	Part No.	*	Description	Code
DIODES					L6601,	VP-XF3R3K0000	J	3.3 μ H (VC-A51GM(GY))	AB
D701,	RH-DX0053GEZZ	J	1S5132	AA	6602			(VC-A51GM(GY))	
705,					CAPACITORS				
706,					C702,	VCE9EA1HW105M	J	1 μ F, 50V, 20%, Electrolytic (N.P.)	AC
708,					712,				
709,					2201				
710,					C713,	VCQYTA1HM104K	J	0.1 μ F, 50V, 10%, Mylar	AC
712,					1562,				
713,					6611				
714,					C715	VCE9EA1HW225M	J	2.2 μ F, 50V, 20%, Electrolytic (N.P.)	AB
801,					C719,	VCEAGA0JW107M	J	100 μ F, 6.3V, 20%, Electrolytic	AB
803,					728				
956,					C727	RC-QZZ473UMYK	U	0.047 μ F, 50V, 10%, Mylar	AB
957,					C733	VCE9EA1CW106M	J	10 μ F, 16V, 20%, Electrolytic (N.P.)	AC
1451,			(VC-A51GM(GY))		C738	RC-KZ0011GEZZ	J	0.1 μ F, Ceramic	AA
1452,			(VC-A51GM(GY))		C750	RC-KZ0019GEZZ	J	0.1 μ F, 25V, Ceramic	AA
8802,					C751	VCQYTA1HM102K	J	1000pF, 50V, 10%, Mylar	AB
8830,			(VC-A51GM(GY))		C765	RC-QZY392UMYK	U	3900pF (VC-A51GM(GY))	AA
8831			(VC-A51GM(GY))		C814	VCE9EA1HW335M	J	3.3 μ F, 50V, 20%, Electrolytic (N.P.)	AB
D952	RH-EX0574UMZZ	U	HZS6.2EB3	AA	C815	VCEAGA1CW107M	J	100 μ F, 16V, 20%, Electrolytic	AB
D954	RH-DX0052GEZZ	J	ERA15-02	AB	C816	RC-KZ0017GEZZ	J	0.047 μ F, Ceramic	AA
D959	RH-EX0573UMZZ	U	BZX79-B5V6	AA	C1452,	RC-QZA334UMYK	U	Capacitor	AB
D2201,	RH-EX0546UMZZ	U	BZX79-C15	AA	1453				
2202,					C1564,	VCEAEA1CW107M	J	100 μ F, 16V, 20%, Electrolytic	AC
4401,					4401				
4402,					C4403	VCEA2A0JW477M	J	470 μ F, 6.3V, 20%, Electrolytic	AB
8801			(VC-A51GM(GY))		C5526	VCEAEA0JW107M	J	100 μ F, 6.3V, 20%, Electrolytic	AB
CONTROLS					C6606	RC-QZZ223UMYK	U	0.022 μ F,	AB
R734,	RVR-M4343GEZZ	J	100k(B) LP Slow/Still Tracking Adj.	AB	RESISTORS				
736,			100k(B) SP Slow/Still Tracking Adj.		R766,	VRN-RA2BK273F	J	27k ohm, 1/8W, 1%, Metal Film	AA
740			100k(B) Playback Phase Generator MM Adj.		767				
R810	RVR-B4336GEZZ	J	100k(B) False Vertical Sync Adj.	AD	MISCELLANEOUS				
COILS AND TRANSFORMER					RiFU-0623GEZZ	J	IF Pack (VC-A51SM(GY))		
FL801	RFILC0094GEZZ	J	Filter	AC					
L1451	VP-XF120K0000	J	12 μ H	AB					
L1555,	VP-DF120K0000	J	12 μ H (VC-A51GM(GY))	AB					
1557,			(VC-A51GM(GY))						
1559			(VC-A51GM(GY))						
1									
1562			(VC-A51GM(GY))						
L4401	VP-MK221K0000	J	220 μ H	AB					
L4403	VP-DF100K0000	J	10 μ H	AB					

Ref. No.	Part No.	*	Description	Code
COILS AND FILTERS				
DL501	RCILZ0292GEZZ	J	Delay Line	AP
FL201	RMPTD0254GEZZ	J	Filter	AG
FL501	RMPTD0239GEZZ	J	Filter	AG
FL502	RCILV0056GEZZ	J	Filter	AF
L201, 212	VP-XF680K0000	J	68μH	AB
L203, 214	VP-DF221K0000	J	220μH	AB
L204	VP-XF101K0000	J	100μH	AB
L205	VP-XF121K0000	J	120μH	AB
L207, 502	VP-XF390K0000	J	39μH	AB
L208	VP-XF150K0000	J	15μH	AB
L211, 213	VP-XF151K0000	J	150μH	AB
L215, 503	VP-XF221K0000	J	220μH	AB
L501	VP-XF180K0000	J	18μH	AB
L504	VP-MK221K0000	J	220μH	AB
L505	VP-MK561K0000	J	560μH	AB
L510	VP-XF5R6K0000	J	5.6μH	AB
L520	VP-XF100K0000	J	10μH (VC-A51GM(GY))	AB

CAPACITORS				
C204	VCE9EA1HW335M	J	3.3μF, 50V, 20%, Electrolytic (N.P.)	AB
C206	RC-QZY124UMYK	U	0.12μF,	
C220, 252, 545,	VCQYTA1HM104K or RC-QZY104UMZZ	J U	0.1μF, 50V, 5%, Mylar 0.1μF (VC-A51GM(GY))	AC AA
547				
C225	RC-QZA223TAYZ	J	0.022μF, 50V, 5%, Mylar	AB
C254	VCEAEA0JW107M	J	100μF, 6.3V, 20%, Electrolytic	AB
C504	RC-QZA392UMYK	J	3900pF, 50V, 5%, Mylar	AA
C507	RC-QZA222TAYJ	J	2200pF, 50V, 5%, Mylar	AB
C509	RC-QZY394UMYK	U	0.39μF (VC-A51GM(GY))	AB
C509	RC-KZ0011GEZZ	J	0.1μF, Ceramic (VC-A51SM(GY)/ VC-A51YM(GY))	AA
C524	RC-QZY393UMYK	U	0.039μF	AA

MISCELLANEOUS				
	QPLGN0329TAZZ	J	Plug, 3 pin (TP501—503)	AB
	QPLGN1078GEZZ	J	Plug, 10 pin (CE)	AC

Ref. No.	Part No.	*	Description	Code
	QSO CN0679GEZZ	J	Socket, 6 pin (CA, CC)	AC
	QSO CN0879GEZZ	J	Socket, 8 pin (CB, CD)	AC

TIMER CIRCUIT				
	DUNTK4219TEV0	-	Timer Board Assembly (VC-A51GM(GY))	—
	DUNTK4219TEV1	-	Timer Board Assembly (VC-A51SM(GY)/ VC-A51YM(GY))	—

TRANSISTORS				
Q5001	VS2SA1561Q/1E	J	2SA1561	AC
Q5002	VSDTC124ELT-1	J	DTC124ELT	AA

INTEGRATED CIRCUITS				
IC5001	RH-iX0589GEZZ	J		AW
IC5002	VHIPST529i2-1	J		AD
IC5003	VHIBR93C46A-1	J	(VC-A51GM(GY))	AG

DIODES AND CRYSTAL				
D5001	RH-DX0053GEZZ	J	1SS132	AA
5003, 5008, 5009, 5016, 5017, 5023, 5025, 5040, 5041			(VC-A51GM(GY)) (VC-A51GM(GY))	
D5022	RH-EX0152GEZZ	J	HZS9.1EB2	AA
D5051	RC-PX0204GEZZ	J	Photo Diode	AB
X5001	RCR5B0090GEZZ	J	Crystal	AA

FILTER				
FL5001	RFILC0115GEZZ	J	Filter	AC
	or			
	RFILC0118GEZZ	J		AC

Ref. No.	Part No.	*	Description	Code
CAPACITOR				
C5016	VCEADA0JW477M	J	470 μ F, 6.3V, Electrolytic	AB

MISCELLANEOUS				
DG5001	VVK8BT99GK/-1	J	Fluorescent Display Tube	AV
	RRMCU0037GEZZ	J	Remote Control Receiver	AL
	QSOCN1095UMZZ	U	Socket, 10 pin (TA) (VC-A51GM(GY))	AC
	QSOCN1595UMZZ	U	Socket, 13 pin (TB) (VC-A51GM(GY))	AC
	QSOCN1095UMZZ	U	Socket, 10 pin (TA, TB) (VC-A51SM(GY)/ VC-A51YM(GY))	AC
S5001, 5002, 5004, 5005, 5006, 5008, 5009, 5010, 5021, 5051, 5052, 5053, 5054, 5055, 5056, 5057, 5058	QSW-K0079GEZZ	J	Switch, Channel Down Switch, Channel Up Switch, Clock Switch, Tracking (-)/ Muting (-) Switch, Tracking (+)/ Muting (+) Switch, Channel Preset Switch, DPSS - Switch, DPSS + Switch, ACL Switch, Power Switch, Eject Switch, Stop Switch, Rewind Switch, Playback Switch, Fast Forward Switch, Pause Switch, Record	AB
S5023	QSW-S0194GEZZ	J	Switch, Full Auto (VC-A51GM(GY))	AC
S5023	QSW-S0193GEZZ	J	Switch, Full Auto (VC-A51SM(GY)/ VC-A51YM(GY))	AC

HEAD AMP. CIRCUIT				
	DUNTK2970TEV2	J	Head Amp. Board Assembly	—

TRANSISTORS				
Q301, 302	VS2SD1302RS-1	J	2SD1302RS	

Ref. No.	Part No.	*	Description	Code
Q303, 304	VS2SA9335QR1E	J	2SA9335QR	AB
Q305 308	VS2SC2412KQ-1	J	2SC2412KQ	AA
Q309	VS2SC1923-O1E	J	2SC1923(O)	AD
Q310	VS2C17405QR1E	J	2SC17405QR	AC
Q311	VS2SA1015Y/1E	J	2SA1015(Y)	AC
Q312	VS2SC1685QR-1	J	2SC1685QR	
Q315	VSDTC144EK/-1	J	DTC144EK	AB

INTEGRATED CIRCUIT				
IC301	VHIAN3311K/-1	J		AS

DIODE				
D301	RH-DX0053GEZZ	J	1SS132	AA

COILS				
L301	VP-XF270K0000	J	27 μ H	AB
L302	VP-XF330J0000	J	33 μ H	AB
L303	VP-XF150K0000	J	15 μ H	AB
L305	VP-XF151K0000	J	150 μ H	AB

CAPACITORS				
C323	RC-QZZ473UMYK	U	0.047 μ F	AC
C350	VCQYTA1HM104K	J	0.1 μ F, 50V, 10%, Mylar	AC
	or			
	RC-QZZ104UMYK	U		AC

MISCELLANEOUS				
	QPLGN0229TAZZ	J	Plug, 2 pin (TP301—302)	AB
	QPLGN1080GEZZ	J	Plug, 10 pin (XA)	AC
	QSOCN0732REZZ	J	Socket, 7 pin (ZA)	AC
FB301	RBLN-0013GEZZ	J	Ferrite Bead	AB

304				
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AUDIO CIRCUIT				
	DUNTK3216TEV0	J	Audio Board Assembly	—

Ref. No.	Part No.	*	Description	Code	Ref. No.	Part No.	*	Description	Code
TRANSISTOR					CONNECTION SHIFT CIRCUIT				
Q602	VS2C3939SQR-1	J	2SC3939SQR	AC	DUNTK3593TEV5	-		Connection Shift Board Assembly (VC-A51GM(GY))	—
INTEGRATED CIRCUIT					DUNTK3593TEV6	-		Connection Shift Board Assembly (VC-A51SM(GY))/VC-A51YM(GY))	—
IC601	VHIBA7765AS-1	J	BA7765AS	AM	TRANSISTOR				
CONTROLS					Q1402	VS2C1740SQR1E	J	2SC1740S (VC-A51GM(GY))	AC
R610	RVR-M4165GEZZ	J	10k(B) Playback Level Adj.	AB	INTEGRATED CIRCUIT				
R630	RVR-M4175GEZZ	J	470k(B) Bias Level Adj.	AB	IC1403	VHISDA5642/-1	J	(VC-A51GM(GY))	AY
COILS AND TRANSFORMER					COIL				
L601	VP-YF822J0000	J	8.2mH	AC	L1401	VP-MK101K0000	J	100μH (VC-A51GM(GY))	AB
L602	VP-CF221K0000	J	220μH	AB	CAPACITORS				
T601	RTRNH0053GEZZ	J	Oscillator	AE	C1405	VCQYTA1HM333K	J	0.033μF, 50V, 10%, Mylar (VC-A51GM(GY))	AB
CAPACITORS					C1408	VCQYTA1HM104K	J	0.1μF, 50V, 10%, Mylar (VC-A51GM(GY))	AC
C601	RC-QZA122TAYJ	J	1200pF, 50V, 5%, Mylar	AA	MISCELLANEOUS				
C604	RC-QZA123TAYJ	J	0.012μF, 50V, 5%, Mylar	AA	QSOCN0794UMZZ	U		Socket, 7 pin (UA) (VC-A51SM(GY))/VC-A51YM(GY))	AB
C608	RC-QZA152TAYJ	J	1500pF, 50V, 5%, Mylar	AA	QSOCN0994UMZZ	U		Socket, 9 pin (UA) (VC-A51GM(GY))	AC
C610	VCEAQA1AW107M	J	100μF, 10V, 20%, Electrolytic	AB	QSOCN0879GEZZ	J		Socket, 8 pin (UB, UC)	AC
C615	RC-QZA183TAYJ	J	0.018μF, 50V, 5%, Mylar	AA	QSOCN1294UMZZ	U		Socket, 12 pin (UD)	AD
C616	RC-QZA153TAYJ	J	0.015μF, 50V, 5%, Mylar	AA	QSOCN1094UMZZ	U		Socket, 10 pin (UE)	AC
C623	VCQPSA2AA562J	J	5600pF, 100V, 5%, Polypro Film	AB	QSOCN1094UMZZ	U		Socket 10 pin (UF) (VC-A51SM(GY))/VC-A51YM(GY))	AC
C627	VCE9AA1HA105M	J	1μF, 50V, 20%, Electrolytic (N.P.)	AC	QSOCN1594UMZZ	U		Socket, 15 pin (UF) (VC-A51GM(GY))	AC
C629	RC-QZY123UMYK	U	0.012μF, 50V, 10%, Mylar						
MISCELLANEOUS									
QPLGN0229TAZZ	J		Plug, 2 pin (TP601—602)	AB					
QPLGN0528TAZZ	J		Plug, 5 pin (603)	AB					
QPLGZ0525GEZZ	J		Plug, 5 pin (K601)	AB					
QPLGZ0625GEZZ	J		Plug, 6 pin (K602)	AC					

Ref. No.	Part No.	*	Description	Code
POWER CIRCUIT				
	RDENT0531GEZZ	-	Power Board Assembly (VC-A51GM(GY))	—
	RDENT0532GEZZ	-	Power Board Assembly (VC-A51SM(GY)/ VC-A51YM(GY))	—

TRANSISTORS				
△Q901	95KUAD0088AC	J	2SD1565(2)	AF
△Q902	95KUAA0069AK	J	2SA1013TPE1	AE

INTEGRATED CIRCUITS				
△IC901	95KUCB0029AZ	J	PQ09R05	AK
△IC902	95KUCB0027AS	J	UPC7805H-2	AG







DIODES				
△D901	95KUBC0112AL	J	11E-TA2B2	AB
	or		(D901-D908)	
△908	95KUBC0200BZ	J	1N4002G (D901-D904)	AG
	or			
	95KUBC0180BZ	J	SR1M-2 (D901-D904)	AB
△D909	95KUBC0150BK	J	11ES2-TA2B2	AB
	or			
	95KUBC0216CK	J	1A3-F	AB
	or			
	95KUBC0125BK	J	ERA15-02V1	AB
D910	95KUBA0004KZ	J	1SS53-T4	AB
	or			
	95KUBA0005AZ	J	1SS55	AB
D911	95KUBDAK6R8D	J	RD6.8ESA83-T4	AB
D913	95KUBDAK330C	J	RD33ESA2-T4	AB
D914	95KUBDAK7R5B	J	RD7.5ESAB1-T4	AB

COILS AND TRANSFORMER				
△L901	95KUKZ0239ZZ	J	Filter	AH
	or			
	95KUKZ0025ZZ	J		AM
△L902	95KUKZ0067ZZ	J	Filter (VC-A51GM(GY))	AP
△T901	95K116035226	U		

Ref. No.	Part No.	*	Description	Code
CAPACITORS				
△C901	95KUGFJ473CX	J	0.047μF, 250V, Film	AG
	or			
	95KUGFZ473FH	J		AE
C902,	95KUGZ0671ZZ	J	2200μF, 35V,	AG
903	or		Electrolytic	
	95KUGZ0654ZZ	J		
△C904	95KUGAG470JS	J	47μF, 63V, Electrolytic	AC
	or			
	95KUGAG470FD	J		
C906	95KUGAD330EK	J	33μF, 25V, Electrolytic	AB
C907	95KUGAC470EK	J	47μF, 16V, Electrolytic	AB
C908	95KUGAB470JS	J	47μF, 10V, Electrolytic	AB
C909	95KUGAB470FD	J	47μF, 50V, Electrolytic	AB
C910	95KUGAF470EK	J	47μF, 50V, Electrolytic	AC

RESISTORS				
△R901,	95KUEZ0437ZK	J	6.8 ohm, 1/2W, Solid	AB
△902	or			
	95KUECC685AE	J		AB
△R903	95KUEB8R27AM	J	0.27 ohm, Fuse Resistor	AC
R906,	95KUEEB471BE	J	0.47 ohm, Carbon	AA
907	or			
	95KUEEB471BF	J		AA
△R908,	95KUES1802AE	J	18k ohm, Carbon	AA
	or			
	95KUES1802AL	J		AA
R909	95KUEEB563BE	J	5.6k ohm, Carbon	AA
	or			
	95KUEEB563BF	J		AA
△R910	95KUES2201AE	J	2.2k ohm, Carbon	AA
	or			
	95KUES2201AL	J		AC
R911	95KUEEB822BE	J	8.2k ohm, Carbon	AA
	or			
	95KUEEB822BF	J		AA
R912,	95KUEEB472BE	J	4.7 ohm, Carbon	AA
913	or			
	95KUEEB472BF	J		AA
R914,	95KUEEB153BE	J	15k ohm, Carbon	AA
915	or			
	95KUEEB153BF	J		AA
△PR901	95KUEZ0403ZK	J	6.8 ohm, Thermistor	AF

MISCELLANEOUS				
△F901	95KPJCTB1001	J	T1A, 250V, Fuse	AD
	or			
△	95KPJCAY1001	J		AD
△F902	95KPJCTB2501	J	T2.5A, 250V, Fuse	AD

Ref. No.	Part No.	*	Description	Code	Ref. No.	Part No.	*	Description	Code
* 	QACCV2031UMZZ	U	AC Cord			QACCZ2011GEZZ	J	AC Cord	AT
	or		(VC-A51SM(GY)/			or		(VC-A51GM(GY))	
* 	QACCV2038GEZZ	J	VC-A51YM(GY))	AM		QACCZ2021GEZZ	J		
	or					95KPKZ0194ZZ		Plug, 3 pin (OA)	AC
* 	QACCV2039UMZZ	U		AT		95KPCZ0149ZZ		Socket, 9 pin (PA)	

*** Remark:**

When changing main cord the whole cord with connection plug must be changed.
(VC-A51SM(GY))

The cable is kept as a spare part by:

- SWEEDEN
SHARP ELECTRONICS (SVENSKA) AB
- DENMARK
RUDOLPH SCHMIDT A/S
- FINLAND
ASA KULUTUS ELEKTRONIIKA OY
- NORWAY
TRANSEL A/S

*** Bemerkung:**

Bei der Auswechslung des Netzkabels muß das ganze Kabel mit Stecker ausgewechselt werden.
(VC-A51SM(GY))

Hat das Kabel als Ersatzteil vorrätig:

- SCHWEDEN
SHARP ELECTRONICS (SVENSKA) AB
- DÄNEMARK
RUDOLPH SCHMIDT A/S
- FINNLAND
ASA KULUTUS ELEKTRONIIKA OY
- NORWEGEN
TRANSEL A/S

THE OTHER PARTS

QCNW-2702GEZZ	J	Connecting Cord	AK
TINS-2115UMZZ	U	Operation Manual (VC-A51GM(GY))	
TINS-2116UMZZ	U	Operation Manual (VC-A51SM(GY))	
TINS-2117UMZZ	U	Operation Manual (VC-A51YM(GY))	
RRMCG0979GES A	U	Infrared Remote Control Unit (VC-A51SM(GY)/ VC-A51YM(GY))	
RRMCG0978GES A	U	Infrared Remote Control Unit (VC-A51GM(GY))	
92PBAS11M202A		Battery Cover, Infrared Remote Control	

MECHANISM CHASSIS PARTS

1	PGIDS0023GEFW	J	Retaining Guide	AE
2	MSPRC0142GEFJ	J	Retaining Guide Spring	AA
3	MLEVC0022GEZZ	J	Half-Loading Lever	AF
4	MSPRT0270GEFJ	J	Half-Loading Lever Spring	AA
5	MLEVF0284GEFW	J	Half-Loading Drive Lever	AC
6	MSPRT0269GEFJ	J	Half-Loading Reciprocating Spring	AA

7	MLEVF0283GEZZ	J	Half-Loading Reciprocating Lever	AB
8	MSPRC0144GEFJ	J	Azimuth Spring	AA
9	RHEDU0070GEZZ	J	Audio/Control Head Ass'y	AS
10	PCAPS1015GEZZ	J	Retaining Guide Cap	AA
11	QPWBF2888GEZZ	J	Audio/Control Head PWB	AB
12	MLEVF0292GEZZ	J	Audio/Control Head Arm	AD
13	MSPRD0087GEFJ	J	Audio/Control Head Arm Spring	AA
14	LHLDZ1606GEZZ	J	Loading Block Holder Ass'y	AC
15	QPRBF2886GEZZ	J	Loading Block PWB	AD
16	RMOTM1049GEZZ	J	Loading Motor	AM
17	QPLGN0529TAZZ	J	Plug, 5 pin (MG)	AB
18	QSW-R0026GEZZ	J	Cam Switch	AE
19	NGERW1032GEZZ	J	Worm Wheel	AC
20	NPLYV0133GEZZ	J	Loading Motor Pulley	AC
21	NBLTK0058GE00	J	Loading Belt	AA
22	NGERW1031GEZZ	J	Worm Ass'y	AC
23	NSFTG0045GEFJ	J	Worm Shaft	AB
24	NGERH1129GEZZ	J	Master Cam	AC
25	MLEVF0281GEZZ	J	Pinch Roller Lever Ass'y	AN
26	MLEVF0290GEZZ	J	Relay Shifter Lever	AE
27	MLEVC0023GEZZ	J	Reverse Guide	AG
28	MSPRD0086GEFJ	J	Reverse Guide Spring	AA
29	RMOTN2028GEZZ	J	Capstan D.D. Motor	AZ
30	MLEVP0136GEZZ	J	Slow Brake Lever	AA
31	MSPRT0276GEFJ	J	Slow Brake Spring	AA
32	MSPRC0151GEFJ	J	Reverse Guide Spring	AA
33	MLEVF0289GEZZ	J	Relay Gear Drive Lever	AE
34	MSLIF0043GEZZ	J	Brake Shifter	AK
35	NSFTZ0068GEFD	J	Brake Lock Shaft	AC
36	MSPRC0143GEFJ	J	Absorber Plate Spring	AB

Ref. No.	Part No.	*	Description	Code
37	MSPRT0274GEFJ	J	Video Search Spring	AB
38	MLEVP0181GEZZ	J	Video Search Brake Lever	AD
39	MLEVP0131GEZZ	J	Video Search Reciprocating Lever	AC
40	RPLU-0083GEZZ	J	Brake Solenoid Ass'y	AF
41	NDAiV1046GEZZ	J	Take-Up Reel Disk Ass'y	AG
42	NGERH1128GEZZ	J	Idler Gear Ass'y	AN
43	NPLYV0134GEZZ	J	Reel Pulley	AC
44	MSPRD0085GEFJ	J	Shifter Spring	AB
45	PCOVF01018GEZZ	J	Shifter Spring Cover	AC
46	LHLDP1092GEZZ	J	Cassette LED Holder	AE
47	RH-PX0180GEZZ	J	Cassette LED	AD
48	QPWBF2977GEZZ	J	Reel Sensor PWB	AK
49	RH-PX0181GEZZ	J	Reel Sensor	AE
50	LCHSS0016GEZZ	J	Reel Block Chassis	AL
51	MLEVP0134GEZZ	J	Tension Adjusting Lever	AC
52	MLEVP0195GEZZ	J	Tension Release Lever	AC
53	MLEVP0132GEZZ	J	Back Tension Lever	AC
54	MSPRT0273GEFJ	J	Back Tension Lever Spring	AB
55	NDAiV1047GEZZ	J	Supply Reel Disk Ass'y	AH
56	MSPRT0272GEFJ	J	Main Brake Spring	AC
57	MLEVP0135GEZZ	J	Intermediate Lever	AC
58	MLEVP0129GEZZ	J	Main Take-Up Brake Lever	AE
59	MLEVP0128GEZZ	J	Main Supply Brake Lever	AE
60	NGERH1121GEZZ	J	Loading Relay Gear	AA
61	MSPRT0271GEFJ	J	Loading Reciprocating Spring	AA
62	NGERH1120GEZZ	J	Take-Up Loading Gear	AA
63	MLEVF0304GEZZ	J	Take-Up Loading Arm Ass'y	AC
64	NGERH1119GEZZ	J	Supply Loading Gear	AA
65	MLEVF0303GEZZ	J	Supply Loading Arm Ass'y	AC
66	LCHSM0108GEZZ	J	Main Chassis Ass'y	AR
67	LBNDK1002GEZZ	J	Tension Band Ass'y	AD
68	LHLDZ1607GEZZ	J	Tension Spring Hook Plate	AA
69	MSPRT0275GEFJ	J	Tension Spring	AA
70	MLEVF0291GEZZ	J	Tension Arm Ass'y	AF
72	MSLIF0049GEFW	J	Take-Up Pole Base Slider	AB
73	LPOLM0037GEZZ	J	Take-Up Pole Base Ass'y	AG
74	NROLP0062GEZZ	J	Guide Roller Ass'y	AE
75	MSLIF0048GEFW	J	Supply Pole Base Slider	AB
76	LPOLM0036GEZZ	J	Supply Pole Base Ass'y	AG
77	PGIDM0066GEZZ	J	Take-Up Loading Rail	AB
78	PGIDM0067GEZZ	J	Supply Loading Rail	AB
79	NSFTL0563GEFW	J	Supply Impedance Roller Innor	AC
80	PGIDH0031GEFW	J	Supply Impedance Roller Flange	AA

Ref. No.	Part No.	*	Description	Code
81	NROLP0084GEZZ	J	Supply Impedance Roller	AC
82	RHEDT0026GEZZ	J	Full Erase Head Ass'y	AK
83	QPWBF2936GEZZ	J	Full Erase Head PWB	AA
84	LANGA0054GEZZ	J	Supply Reel Retainer Ass'y	AD
85	NBLTK0059GE00	J	Reel Belt	AB
86	MLEVP0146GEZZ	J	Auxiliary Fast-Forward Brake Lever	AE
87	MSPRT0282GEFJ	J	Auxiliary Fast-Forward Brake Spring	AB
89	DDRMU0004HE17	J	Upper Drum Ass'y	BL
90	PGIDC0039GEFW	J	Drum Base	AL
91	DDRML0012HE00	J	Lower Drum Ass'y	BE
92	QBR5K0021GEZZ	J	Earth Brush Ass'y	AC
93	RMOTP1107GEZZ	J	Drum D.D. Motor Ass'y	AW
97	QCNW-5969GEZZ	J	Full Flat Cable (Capstan D.D. Motor and Drum D.D. Motor)	AM
100	QSOCN0534REZZ	J	Socket, 5 pin (MF)	AC
101	VRS-TW2ED221J	J	220 ohm, 1/4W, 5%, Oxide Film	AA
102	VCKYTV1HB102K	J	0.001µF, 50V, 10%, Ceramic	AA
103	VRS-TV1JD473J	J	47k ohm, 1/16W, 5%, Oxide Film	AA
105	LANGA0051GEFW	J	Take-Up Reel Disk Catch Holder	AB
106	PGIDS0027GEZZ	J	Supply Impedance Roller Flange L	AA
110	PCAPS1018GEZZ	J	Slow Brake Shaft Cap	AA
111	LANGF7061GEZZ	J	Release Pin Angle Ass'y	AC
114	CCHSS0018GE02	J	Reel Block Ass'y	AZ
135	94SSEE551121A	J	Capstan DD IC	AU
136	94SSEE559421A	J	Drum Motor DD IC	AU
137	PSPAZ0315GEZZ	J	Inertia Plate	AB

CASSETTE HOUSING CONTROL PARTS

	CHLDX3052GE51	J	Cassette Housing Control Assembly	AY
301	PGIDM0069GE00	J	Down Guide	AC
302	QSW-F0034GEZZ	J	Cassette Erase Protection Switch	AC
303	LHLDX1014GE00	J	Cassette Housing Frame (Right)(rechts)	AC
304	MARMP0043GE00	J	Cassette Cover Arm (A)	AA
305	MARMP0044GE00	J	Cassette Cover Arm (B)	AA
306	NGERW1036GEZZ	J	Phase Gear	AA
307	MSPRT0290GEFJ	J	Cassette Cover Arm Reciprocating Spring	AA
308	MSPRD0088GEFJ	J	Drive Gear Spring (Right)	AA

Ref. No.	Part No.	*	Description	Code	Ref. No.	Part No.	*	Description	Code
309	NGERW1034GEZZ	J	Drive Gear (Right)	AB	356	QCNW-4789GEZZ	J	Connecting Cord	AF
310	MSPRT0277GEFJ	J	Reciprocating Spring	AA	401	LX-WZ1020GE00	J	Cut Washer (4.2W-6.0-0.5)	AA
311	NGERW1033GEZZ	J	Worm Wheel Gear	AB	402	LX-HZ3046GEFD	J	Screw	AA
312	LANGF9355GEFW	J	Worm Bracket	AB					
313	NBRGP0013GEZZ	J	Bearing	AA					
314	MLEVP0142GE00	J	Open Lever	AA					
315	MSPRD0091GEFJ	J	Open Lever Spring	AA					
316	MLEVP0141GEZZ	J	Switching Lever	AA					
317	MSPRT0280GEFJ	J	Switching Lever Spring	AA					
318	NSFTD0016GEZZ	J	Worm Shaft Ass'y	AE					
319	MLEVP0140GEZZ	J	Clutch Lock Lever	AA					
320	MSPRT0279GEFJ	J	Clutch Lock Lever Spring	AA					
321	MLEVP0139GEZZ	J	Clutch Release Lever	AA					
322	MSPRD0092GEFJ	J	Clutch Release Lever Spring	AA					
323	MLEVP0138GEZZ	J	Clutch Lever	AA					
324	NPLYV0135GEZZ	J	Pulley	AA					
325	NBLTK0060GE00	J	Cassette Loading Belt	AB					
326	LANGF9354GEFW	J	Upper Plate	AD					
327	LHLDX1013GE00	J	Slider Holder (Left)	AB					
328	MSPRP0097GEFJ	J	Cassette Spring	AA					
329	LANGF9357GEFW	J	Slider Lock (Left)	AA					
330	MSPRT0281GEFJ	J	Slider Lock Spring	AA					
331	MSLIF0044GEFW	J	Slider	AF					
332	MLEVP0137GEZZ	J	Lock Release Lever	AA					
333	MSPRD0093GEFJ	J	Lock Release Lever Spring	AA					
334	MLEVP0143GE00	J	Slider Lock Cover	AA					
335	LANGF9356GEFW	J	Slider Lock (Right)	AA					
336	LHLDX1010GE00	J	Slider Holder (Right)	AB					
337	NGERW1035GEZZ	J	Drive Gear (Left)	AB					
338	MSPRD0089GEFJ	J	Drive Gear Spring (Left)	AA					
339	LHLDX1015GE00	J	Cassette Housing Frame (Left)	AC					
340	NSFTD0015GEFD	J	Main Shaft	AD					
341	QPWBF2894GEZZ	J	End Sensor PWB	AB					
342	RH-PX0176GEZZ	J	Phototransistor	AE					
343	QPWBF3194GEZZ	J	Start Sensor PWB	AC					
344	QSW-F0040GEZZ	J	Cassette Switch	AD					
345	ZTAPEZ790008E	J	Rubber Mat	AA					
347	QSOCN0595GEZZ	J	Socket, 5 pin	AB					
348	VSDTC124F/-1	J	Transistor	AC					
349	VS2SA937-Q/-1	J	Transistor	AC					
350	VRD-SA2BB153J	J	15k ohm, 1/8W, 5%, Carbon	AA					
351	VRD-SA2BB223J	J	22k ohm, 1/8W, 5%, Carbon	AA					
352	VRD-SA2BB103J	J	10k ohm, 1/8W, 5%, Carbon	AA					
353	VRD-SA2BB472J	J	4.7k ohm, 1/8W, 5%, Carbon	AA					
354	VRD-SA2BB332J	J	3.3k ohm, 1/8W, 5%, Carbon	AA					
355	RC-KZ0028GEZZ	J	0.047µF, 16V, 20%, Ceramic	AA					

SCREWS, NUTS, AND WASHERS

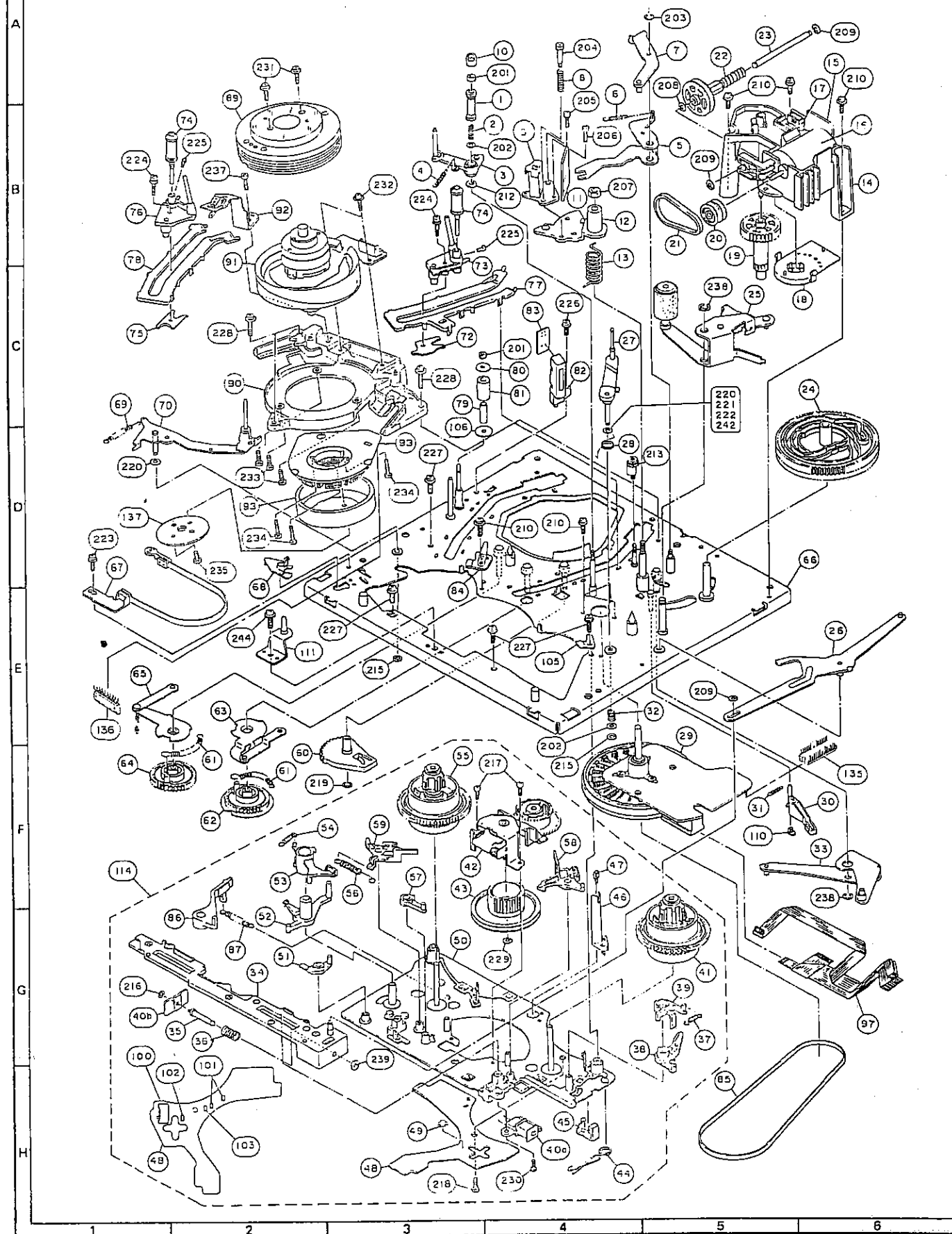
201	XNFSD20-16000	J	Adjusting Nut	AA
202	XWHS26-05060	J	Washer W2.6S-6-0.5	AA
203	XRESJ20-04000	J	E Ring-2	AA
204	LX-BZ3095GEFD	J	AC Head Screw	AA
205	XBPSD26P06000	J	Azimuth Adjusting Screw	AA
206	LX-BZ3096GEFD	J	Tilt Adjusting Screw	AA
207	XNFSD40-31000	J	Adjusting Nut (A/C Head)	AB
208	XWHJZ31-05054	J	Washer W3.1-5.4-0.5	AA
209	LX-WZ1041GE00	J	Washer W2.6-6-0.5 (LM)	AA
210	XHPSD26P06WS0	J	Screw C2.6P + 6S	AA
211	XRESJ30-06000	J	E Ring-3	AA
212	XWHJZ45-02060	J	Washer PSW4.6-6-0.25	AA
213	LX-NZ3046GEFW	J	Adjusting Nut	AB
215	LL-WZ1003GE00	J	Washer CW2.1-5-0.5	AA
216	XRESJ12-03000	J	E Ring-1.2	AA
217	XHPSD26P03000	J	Screw S2.6P + 3S	AA
218	XHPSD20P03000	J	Screw 2P + 3S	AA
219	XRESJ25-04000	J	E Ring-2.5	AA
220	XWHJZ25-05050	J	Washer W2.6-5-0.5	AA
221	XWHJZ25-01050	J	Washer W2.6-5-0.13	AA
222	XWHJZ25-02050	J	Washer W2.6-5-0.25	AA
223	LX-HZ3043GEZZ	J	Screw W2.6 + 6S	AA
224	LX-BZ3099GEZZ	J	Screw WSW2P + 11S (W5)	AB
225	LX-XZ3030GEFD	J	Screw M2 x 4	AC
226	XHPSD26P08WS0	J	Screw C2.6P + 8S	AA
227	XJPSD26P08WS0	J	B Tight Screw C2.6P + 8S	AA
228	XHPSD30P08WS0	J	Screw C3P + 8S	AA
229	LX-WZ1040GE00	J	Washer CW2.5-6-0.5	AA
230	XJBSD20P06000	J	B Tight Screw 2P + 6S	AA
231	LX-BZ3039GEFN	J	Screw W3P + 9S-Ni	AA
232	LX-HZ3056GEFD	J	Screw S3P + 10S + W6 + SW	AA
233	XBPSD30P08J00	J	Screw SW3P + 8S	AA
234	XBPSD26P12J00	J	Screw SW2.6P + 12S	AA
235	XBPSD30P05J00	J	Screw SW3P + 5S	AA
237	XHPSD30P06000	J	Screw S3P + 6S	AA
238	LX-RZ3001AEZZ	J	E Ring (Curl)	AA
239	LX-WZ1042GE00	J	Washer CW2.7-7-0.5	AA
242	XWHJZ25-04050	J	Washer W2.6-5-0.4	AA
244	XHPSD30P04WS0	J	Screw C3P + 4S	AA

Ref. No.	Part No.	*	Description	Code
MECHANICAL PARTS				
601	CCABB1079TEV0	U	Main Frame Ass'y	
601-1	PFLT-0069GEZZ	J	Felt, Pad	AA
601-2	GCABB1079UMZZ	U	Main Frame	
602	GCABA3046UMST	U	Top Cabinet	
603	GBDYU3052UMZZ	U	Bottom Plate	AK
604	GCOVA1511UMZZ	U	Antenna Terminal Cover	AF
607	LHLDZ1609UMZZ	U	Y/C Holder	AA
608	QEARP0276UMFW	U	Earth Plate, Upper	AA
609	MSPRC0145UMFJ	U	Spring, Power (VC-A51GM(GY))	AA
609	PSPAS0015UMZZ	U	Spacer (VC-A51SM(GY)/VC-A51YM(GY))	AA
610	XEBSD30P12000	J	Screw	AA
611	XHPD30P06WS0	J	Screw	AA
612	XEBSD40P12000	J	Screw	AA
614	LX-HZ3040GEFF	J	Screw, Top Cabinet	AA
615	LHLDP1012GE08	J	LED Holder	
617	LHLDZ1716GEZZ	J	Holder, Fluorescent Display Tube	AC
619	TLABM0119UMZZ	U	Model Label (VC-A51GM(GY))	
619	TLABM0120UMZZ	U	Model Label (VC-A51SM(GY)/VC-A51YM(GY))	
620	PSPAZ0202GEZZ	J	Spacer	AC
622	LHLDZ1624UMZZ	U	Holder	AD
623	LX-HZ3047GEFF	J	Screw, Bottom Plate	AA
624	LHLDZ1616GEZZ	J	Holder	AA
626	HDECA0132GEZZ	J	Earth Connection Plate (VC-A51GM(GY))	AH
627	HDECA0133GEZZ	J	Earth Connection Plate (VC-A51GM(GY))	AH
630	PSPAZ0202GEZZ	J	Spacer	AA
631	XJBSD30P16000	J	Screw (VC-A51SM(GY)/VC-A51YM(GY))	AA
632	XHPS330P06WS0	J	Screw	AA
633	LANGF9367GEFW	J	Casecon Angle	AB

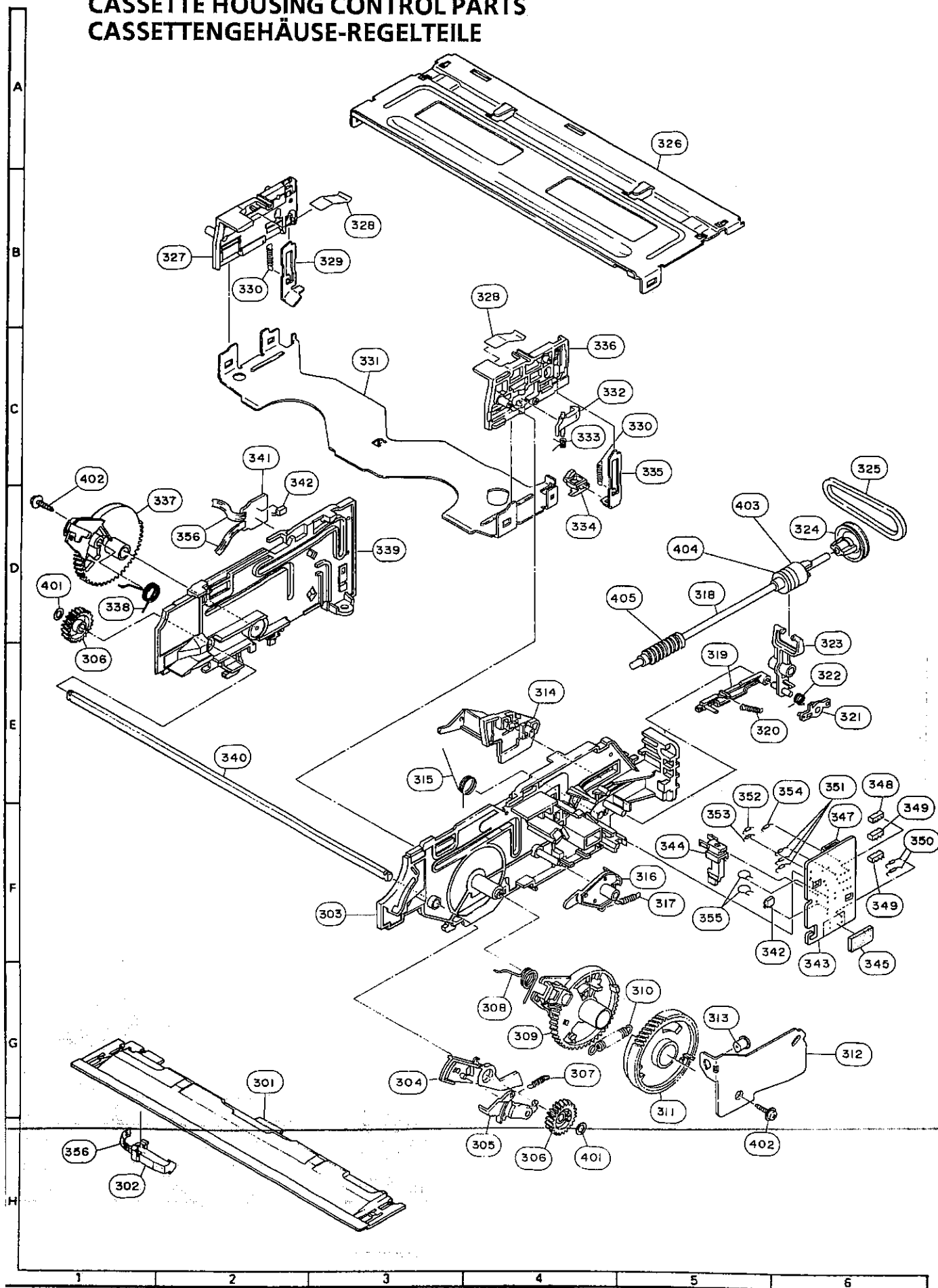
Ref. No.	Part No.	*	Description	Code
634	QEARP0341GEFW	J	Side Earth (VC-A51YM(GY))	
635	LHLDZ1610GEZZ	J	VPS Holder	AA

FRONT PANEL PARTS				
501	CPNLC1769TEV0	U	Front Panel Assembly (VC-A51GM(GY))	
	CPNLC1769TEV1	U	Front Panel Assembly (VC-A51SM(GY)/VC-A51YM(GY))	
501-1	MSPRD0103GEFJ	J	Spring	AB
501-2	LHLDZ1662UMZZ	U	Holder	AB
501-3	LHLDZ1663UMZZ	U	Holder	AB
501-4	HDECQ0999UMSA	U	Cassette Compartment Cover	
501-5	LHLDZ1661UMZZ	U	Holder	AA
501-6	QEARP0272UMFW	U	Earth Plate	AA
501-7	PCOVU9171GESB	J	Fluorescent Display Filter	AE
501-10	CBTN-2533GE02	U	Operate/Eject Button Ass'y	AG
501-10-1	GCOVA1671GESA	U	LED Cover	AE
501-10-2	JBTN-2533GESB	J	Power Eject Button	
501-11	LHLD51010UMZZ	U	Door Holder	AB
501-12	GCOVA1425UMZZ	U	R/C Cover	AB
501-13	HDECQ0697UMSA	U	Decoration Plate	AG
501-14	HiNDP1944UMSA	U	Indication Plate (Inside the door) (VC-A51GM(GY))	
501-14	HiNDP1945UMSA	U	Indication Plate (Inside the door) (VC-A51SM(GY)/VC-A51YM(GY))	
501-17	GDORF2131UMSA	U	Door (VC-A51GM(GY))	
	GDORF2132UMSA	U	Door (VC-A51SM(GY)/VC-A51YM(GY))	
501-20	JBTN-2227UMSA	U	Button, REC	AF

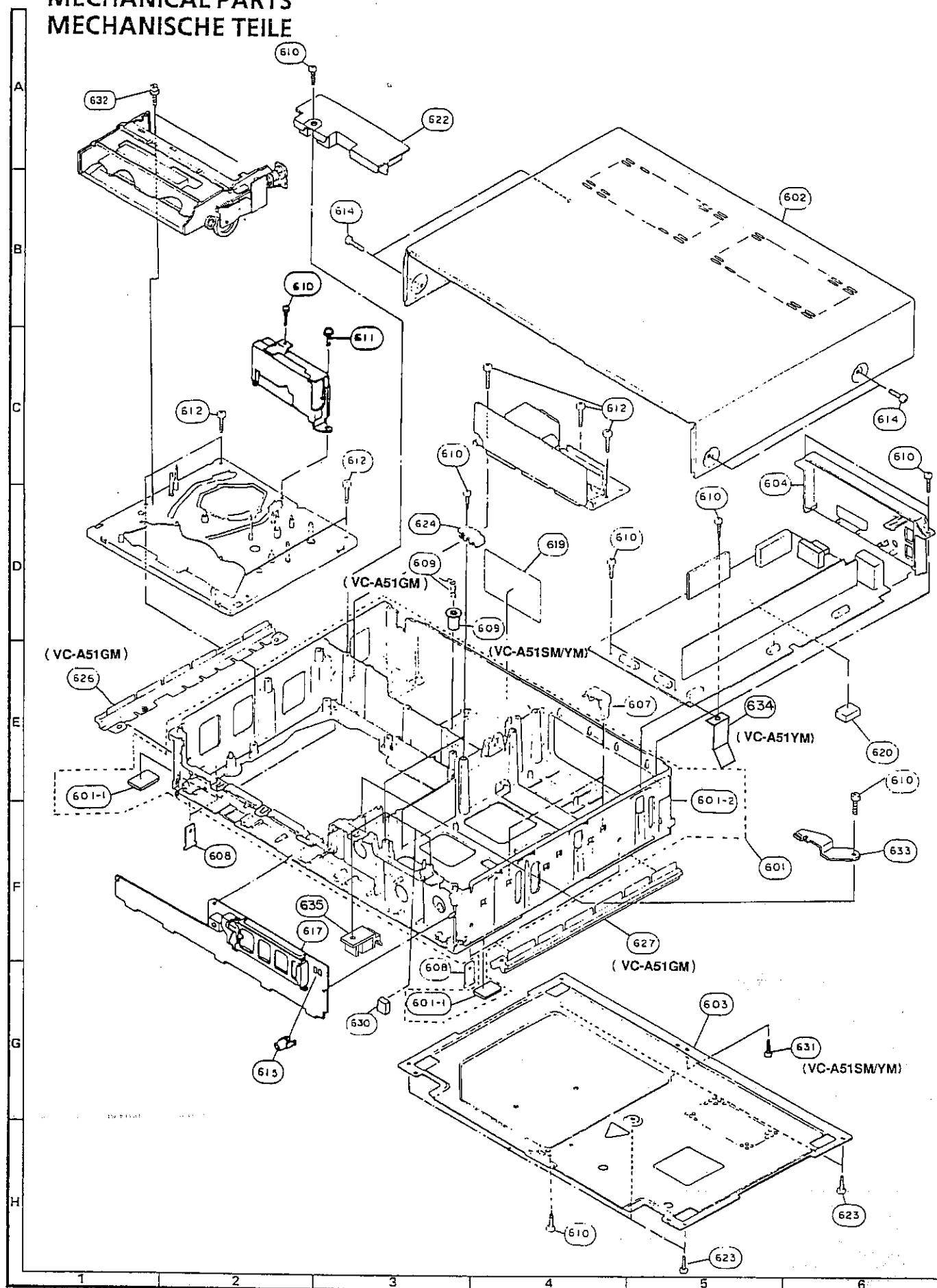
MECHANISM CHASSIS PARTS TEILE DES LAUFWERKCHASSIS



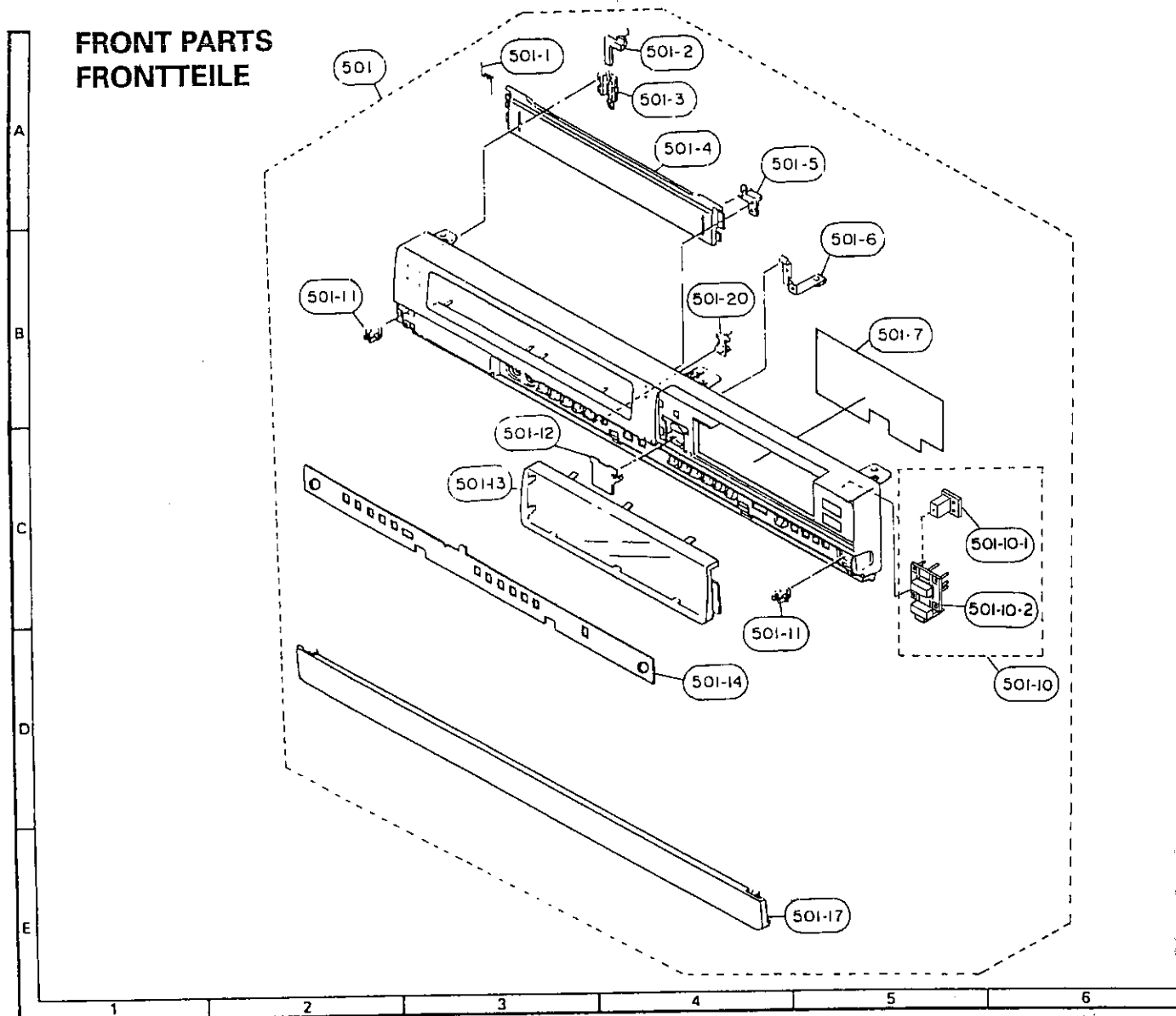
CASSETTE HOUSING CONTROL PARTS CASSETTENGEHÄUSE-REGELTEILE



MECHANICAL PARTS MECHANISCHE TEILE

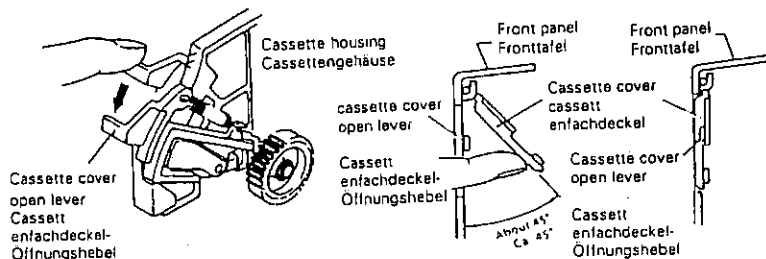


FRONT PARTS FRONTTEILE



PRECAUTIONS ON FRONT PANEL SET-UP

VORSICHTSMASSNAHMEN BEIM ANBRINGEN DER FRONTTAFEL



Before attaching the front panel in position, make sure that the cassette cover open lever is in its right place (lowermost). If it is out of position, push it down with a finger.

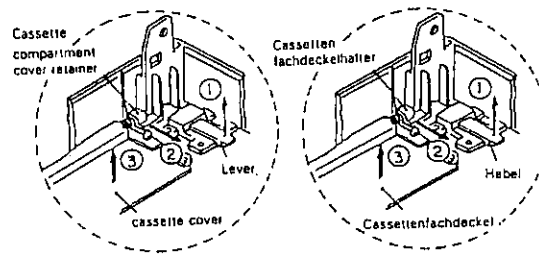
Vor dem Anbringen der Fronttafel sicherstellen, daß sich der Cassetteneinfachdeckel-Öffnungshebel richtig (tiefste Stelle) befindet. Wenn sich der Hebel nicht in dieser Position befindet, ihn mit einem Finger hinunterdrücken.

keep the cassette cover about 45° open and make sure that the cassette cover open lever is between the front panel and the cassette cover. Now fix the front panel in place.

Den Cassetteneinfachdeckel ca. 45° offen halten und sicherstellen, daß sich der Öffnungshebel zwischen der Fronttafel und dem Cassetteneinfachdeckel befindet. schließlich die Fronttafel befestigen.

Do not mount the front panel with the cassette cover tilted too open. Otherwise the cassette cover might wrongly run on the cassette housing.

Die Fronttafel nicht anbringen, wenn der Cassetteneinfachdeckel zu weit geöffnet ist. Der Cassetteneinfachdeckel könnte durch das Cassettengehäuse beschädigt werden.



Removing the cassette compartment cover.

1. Lift up the lever in the direction of arrow ① to shift the cassette compartment cover retainer in the direction of arrow ②.

2. Lift up the cassette compartment cover in the direction of arrow ③ and remove it from the front panel.

Entfernen des Cassetteneinfachdeckels

1. Den Hebel in die Pfeilrichtung ① anheben, um den Cassetteneinfachdeckelhalter in die Pfeilrichtung ② zu schieben.

2. Den Cassetteneinfachdeckel in die Pfeilrichtung ③ anheben und den Deckel von der Frontplatte entfernen.

PACKING OF THE SET / VERPACKUNG DES GERÄTES

● Setting position of the Knobs

● Einstellpositionen der Knöpfe

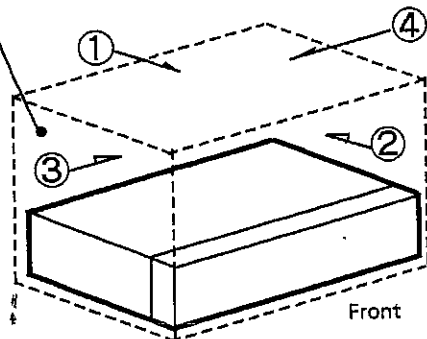
Colour mode	at "AUTO" position	Farbmodus	Stellung "AUTO"
Test signal	at "OFF" position	Prüfsignal	Stellung OFF (AUS)

★ Accessories / Zubehör

- ★ TINS-2115UMZZ Operation manual
(VC-A51GM) Bedienungsanleitung
- ★ TINS-2116UMZZ Operation manual
(VC-A51SM) Bedienungsanleitung
- ★ TINS-2117UMZZ Operation manual
(VC-A51YM) Bedienungsanleitung
- ★ QCNW-2702GEZZ 75 ohm Coaxial cable
75 Ohm-Koaxialkabel
- Battery Batterie

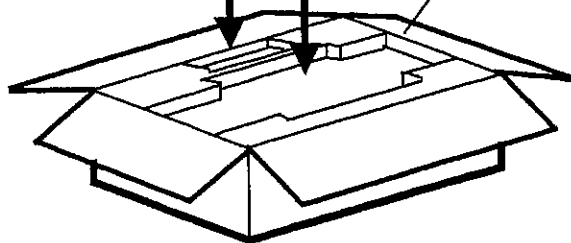
- ★ SSKA0003UMZZ
Polystyrene sack
Polystyrolbeutel

- ★ SPAKP0051UMZZ
Polystyrene sack
Polystyrolbeutel

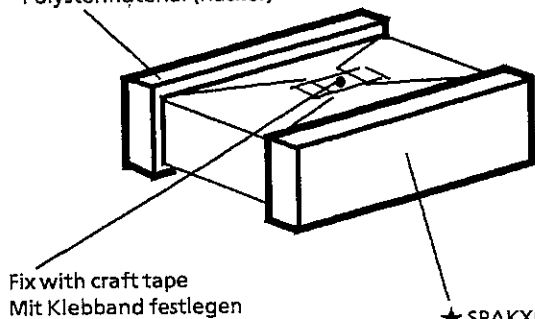


- RRMCG0978GESA
(VC-A51GM)
- RRMCG0979GESA
(VC-A51SM/VC-A51YM)
- Infrared remote control unit
Infrarotfern-
bedienungseinheit

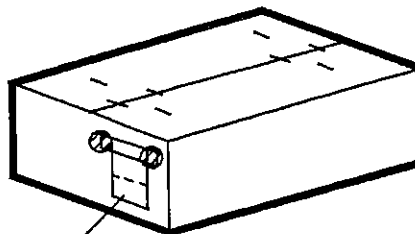
- ★ SPAKC2351UMZZ (VC-A51GM)
- ★ SPAKC2352UMZZ (VC-A51SM)
- ★ SPAKC2353UMZZ (VC-A51YM)
- Packing case
Verpackungskarton



- ★ SPAKX0477UMZZ
Buffer material (Rear)
Polystermaterial (Rücker)



- ★ SPAKX0476UMZZ
Buffer material (Front)
Polystermaterial (Front)



- ★ TLABK0001UMZZ
No. Card
Nummernkarte

★ Not Replacement Items
Keine Ersatzteile

VC-A51GM(GY)
VC-A51SM(GY)
VC-A51YM(GY)

SHARP

T8884-S
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